

UNIVERSITY OF CALIFORNIA
MUSEUM OF VERTEBRATE ZOOLOGY



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Arnold, L.

1937

1. Nevada, Oregon, Utah, California
June 17 - Aug. 6, 1937

2. Ecological study of "Primitive Area", Strawberry Canyon, Berkeley, Alameda Co., Calif.
Oct. - Dec. 1937

Arnold, L.

Nevada, Oregon, Utah
June - Aug. 1937

Arnold, Lee

1937

Catalog of Specimens
May 23 - June 24, 1937
#198 - 384

Lee Arnold
1937

Catalog

1 Mi. NE Towle, Placer Co., Calif.

May 23, 1937

198 ♀ Sceloporus graciosus gracilis

1/2 Mi. S Calneva, Lassen Co., Calif.

May 24, 1937

✓ 199 ♀ Citellus mollis 184-40-27-6; 96.4 gr.

Warm Spring, 4,000 ft., 9 mi. E Amedee,
Lassen Co., Calif.

May 24, 1937

200 Pituohis catenifer deserticola

4 1/2 mi. WNE^W Steady, 4,000 ft., Lassen Co., Calif.

May 25, 1937

✓ 201 ♂ Dipodomys ordii (?) 255-136-37-10; 61 gr.

✓ 202 ♀ " " 245-128-40-15; 60.7 gr.

✓ 203 ♂ Perognathus 189-100-25-9; 29.3 gr.

✓ 204 ♀ " " 197-102-23-9; 27.6 gr.

✓ 205 ♂ " " 180-98-24-9; 22.2 gr.

✓ 206 ♂ Peromyscus 158-72-19-20; 22.1 gr.

✓ 207 ♂ Dipodomys merriami 246-143-39-13; 46.7

✓ 208 ♀ " " 230-128-39-13; 44.4 gr.

Warm Spring, 4,000 ft., 9 mi. E Amedee
Lassen Co., Calif.

May 26, 1937

✓ 209 ♂ Myiochanes richardsoni 159-257 14.5 gr.

✓ 210 ♀ Peromyscus 143-65-19-15 14.5 gr.

✓ 211 ♀ Reithrodontomys 143-66-16-16 15.1 gr.

✓ 212 ♂ " 138-70-16-15 12. gr.

✓ 213 ♂ " 142-71-17-15 13.1 gr.



Lee Arnold
1937

Catalog

Warm Spring, 4,000 ft., 9 mi. E Hmedee, Lassen
Co., Calif.

May 26, 1937

- ✓ 214 ♂ Reithrodontomys 135-70-16-14.5; 11.3 gr.
Skull only
✓ 215 ♀ Sylvilagus nuttallii 360-32-91-63; 950 gr.

216 Cnemidophorus

217 Crotaphytus

218 Fish — From warm water of Warm Spring

~~218~~ May 27, 1937

- ✓ 219 ♀ Perognathus longimembris 140-71-19-7; 12.7 gr.
✓ 220 ♂ Microdipodops 158-80-26-13; 14.8 gr.
✓ 221 ♂ Eutamias minimus 193-86-29-17; ~~34.5 gr.~~
✓ 222 ♂ " " 186-81-28-16; ~~34.5 gr.~~
✓ 223 ♀ Myotis T.L. 102 W.S. 279 Ear 14 Tragus 7; 7.5 gr.

~~224~~ Approx. 2 mi. NE Sand Pass, 3,500 ft.,
Washoe Co., Nevada.

May 27, 1937

224 Cnemidophorus

225 Crotaphytus 5,800 ft.,

~~226~~ Horse Canyon, Pahrump Peak, Washoe Co.,
Nevada

May 28, 1937

- ✓ 226 ♂ Peromyscus 155-69-20-19; 20.8 gr.
✓ 227 ♂ Corynorhinus 104-48-11-36 Tragus: 16 W.S. 302; 7.7 gr.
Skull only
✓ 228 ♀ Neotoma (Teonoma) 353-148-38-33; 335.5 gr.

May 29, 1937

✓ 229 ♀ Microtus 164-56-20-14; 31.8 gr.

✓ 230 ♀ Thomomys quadratus 184-60-26-5; 65.7 gr.

Lee Arnold
1937

Catalog

Horse Canyon, 5800 ft., Pahrum Pk., Washoe Co., Nevada.

May 29, 1937

- ✓ 231 ♂ Perognathus ~~minor~~ 194-104-28-9; 23.8 gr.
✓ 232 ♂ Neotoma cinerea 320-41-34-128; 219.2 gr.
~~23~~ 4 mi W Pahrum Peak, 4,200 ft., Washoe Co., Nevada

May 29, 1937

- 233 Phrynosoma platyrhinos
234 " "

Horse Canyon, 5,000 ft., 3 mi. NW Pahrum Peak, Washoe Co., Nevada.

May 30, 1937

Skull Only

- ✓ 235 Ceniscus letrans
✓ 236 ♂ Perognathus parvus 180+-80+-24-11; 25.7 gr.
✓ 237 ♀ " " (6 emb.) 172-81-22-9; 22.3 gr.
4 mi. N.W. Pahrum Pk., 4,200 ft., Washoe Co., Nevada.

May 30, 1937

- ✓ 238 ♀ Perognathus formosus 182-100-22-11; 19.5 gr.
✓ 239 ♂ " longimembris 144-77-20-7; 8.8 gr.
✓ 240 ♀ (6 emb.) " " 151-74-19-7; 13.5 gr.
✓ 241 ♂ " " 141-72-18-7; 9.0 gr.
✓ 242 ♀ (5 emb.) " " 121+-63+-18-6.5; 8.8 gr.
✓ 243 ♀ " " 139-72-18.5-7; 8.3 gr.
✓ 244 ♀ Dipodomys (ordii?) 229-110-40-14; 42.5 gr.
✓ 245 ♂ " merriami 239-134-37-14.5; 39.9 gr.

Lee Arnold
1937

Catalog

Horse Canyon, 5,800 ft., Pahrump Pk.,

Washoe Co., Nevada

May 30, 1937

- ✓ 246 ♂ Thomomys quadratus 208-47-27-5.5; 96.7 gr.
✓ 247 ♀ " " 192-53-24-6; 99.7 gr.

Fox Canyon, 4,800 ft., 6 mi. S Pahrump

Peak, Washoe Co., Nevada.

May 31, 1937

- ✓ 248 ♂ Perognathus longimembris 137-74-19-7; 6.8 gr.
✓ 249 ♀ (6 Emb) " " 116+ - 48+ - 8-6.5; 10.3 gr.
✓ 250 ♂ " " 132-66-8-6.2; 7.6 gr.
✓ 251 ♂ Dipodomys ordii (?) 243-149-40-15; 63.5 gr.
✓ 252 ♀ " " 256-138-39-14; 58.9 gr.
✓ 253 ♀ Peromyscus maniculatus 143-63-20-17; 14.2 gr.

254 Sceloporus graciosus

Mouth of Fox Canyon, 4,250 ft., 7 1/2 mi S

Pahrump Peak, Washoe Co., Nevada

- ✓ 255 ♀ Ammospermophilus leucurus ^{June 4, 1937} 211-60-38-13; 117.5 gr.

256 Cnemidophorus

257 "

258 "

near Smith Creek Cove, 5800 ft.,

Mt. Moriah, White Pine Co., Nevada

June 4, 1937

- ✓ 259 ♀ Perognathus longimembris 132-72-17-7 8.9 gr.
✓ 260 ♀ " " 128-70-17-6.5 7.5 gr.
✓ 261 ♀ Peromyscus crinitus 172-88-19-18 15.8 gr.
✓ 262 ♀ " maniculatus 179-75-18-20; 25.4 gr.

Le Amold
1937

Catalog

near Smith Creek Cave, 5,800 ft.,
T.H. Morich, White Pine Co., Nevada
June 4, 1937

- ✓ 263 ♂ Peromyscus maniculatus 154-69-18-19; 22.4 gr.
✓ 264 ♀ Dipodomys (?) 221-126-139-19; 41.3 gr.
✓ 265 ♂ " ordii (?) 275-161-40-13.5; 61.3 gr.
✓ 266 ♀ " " 273-158-40-14; 61.8 gr.
✓ 267 ♂ " " 271-157-40-15; 69.8 gr.
✓ 268 ♀ " " 225-142-36-13; 54.2 gr.
✓ 269 ♂ Neotoma ~~fuscipes~~ repida 241-70-31-31; 48.7 gr.

1 mile W Smith Creek Cave, 6,000 ft.,
T.H. Morich, White Pine Co., Nevada
June 5, 1937

- ✓ 270 ♀ Ammospermophilus leucurus 212-69-39-14.5; 128.6 gr.

near Smith Creek Cave, 6,800 ft.,
T.H. Morich, White Pine Co., Nevada

June 3, 1937

- 271 Pituohis catenifer

1½ mi. W Smith Creek Cave, 6,800 ft.,
T.H. Morich, White Pine Co., Nevada

June 6, 1937

Skeleton only

- ✓ 272 ♀ Thomomys bottae 203-59-27-5.5; 91.8 gr.

4 mi S Gandy, 5,000 ft.,

Millard Co., Utah

June 6, 1937

Skull only

- ✓ 273 Lynx rufus

- ✓ 274 ♂ Dipodomys (ordii?) 237-130-38-13; 40.2 gr.

- ✓ 275 ♀ Dipodomys (microps?) 276-159-40-15; 68.9 gr.

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Catalog

4 mi. S Gandy, 5,000 ft.,
Millard Co., Utah.

June 6, 1937

- ✓ 276 ♂ Dipodomys microps? 260-143-42-14; 58.3 gr.
✓ 277 ♀ Peromyscus maniculatus 158-66-20-21; 20 gr.
✓ 278 ♂ " " 151-62-18-18.5; 18.3 gr.

279 Phrynosoma platyrhinos

1 mi SW Gandy, 5,000 ft.,

Millard Co., Utah

280 Thamnophis ordinoides

281 " "

✓ 282 ♀ Thomomys bottae 234-65-31-6; 160 gr.

✓ 283 ♀ " " 210+ - 58+ - 29.5 - 6; 133 gr.

✓ 284 ♂ " " 194-40-28-5; 82.5 gr.

near Smith Creek Cave, 5800 ft.,
Mt. Moriah, White Pine Co., Nevada.

June 6, 1937

285 Cnemidophorus

June 7, 1937

286 ♀ Sceloporus occidentalis

✓ 287 ♂ Peromyscus crinitus 165-82-19-21; 16.7 gr.

Skeleton only
✓ 288 ♀ " " 157-81-19-18; 9.3 gr.

✓ 289 ♀ " maniculatus 142-61-17-18; 18.5 gr.

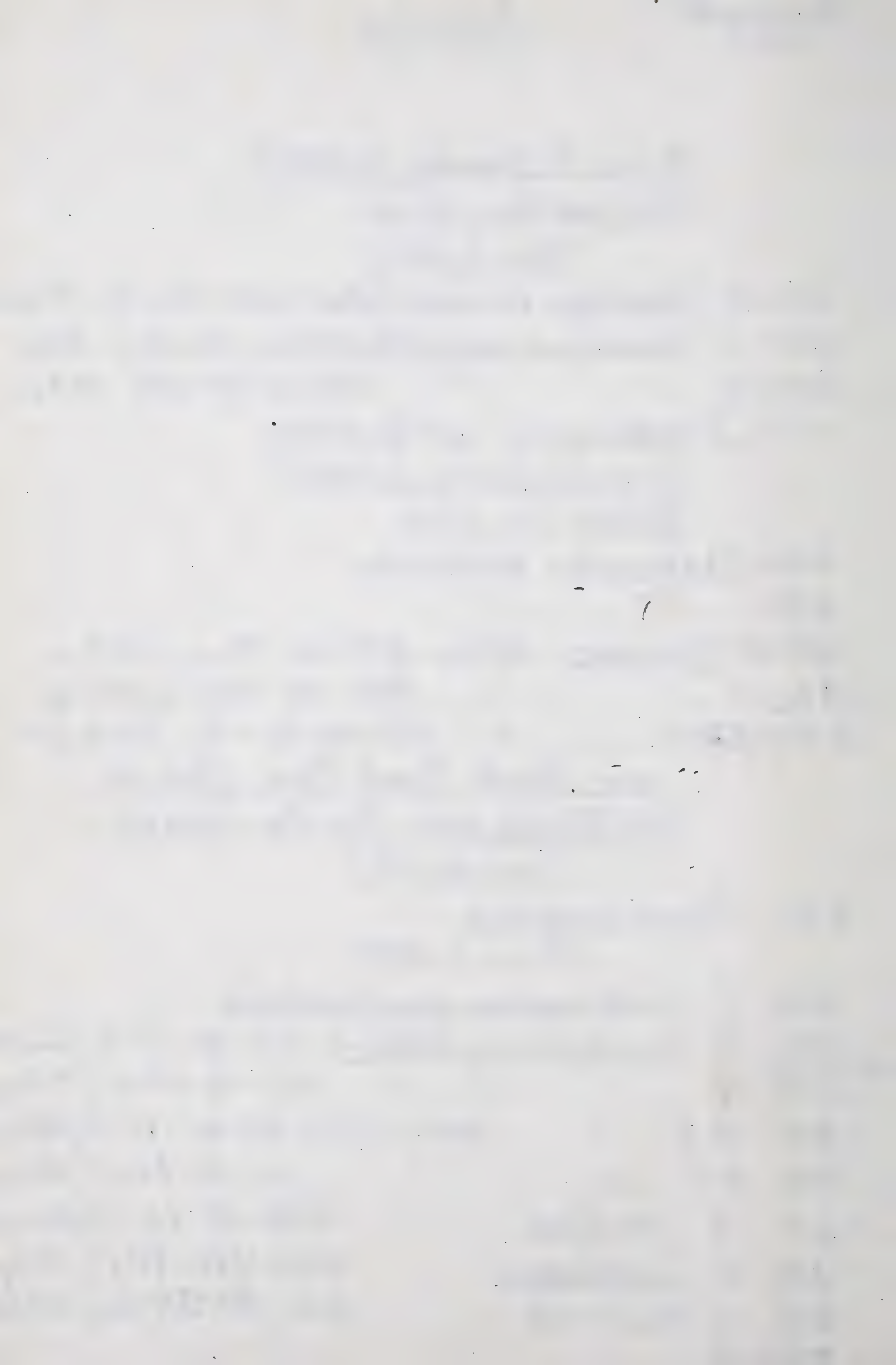
✓ 290 ♂ " " 162-71-20-17; 22.5 gr.

✓ 291 ♂ Neotoma 282-111-30-30; 146.7 gr.

✓ 292 ♂ Dipodomys 266-152-40-14; 55.3 gr.

✓ 293 ♂ Neotoma 216-89-29-26; 64.7 gr.

~~294 ♂~~



Lee Arnold
1937

Catalog

1 1/2 mi. W Smith Creek Cave, 6,000 ft.,
Mt. Moriah, White Pine Co., Nevada.

June 7,

- ✓ 294 ♂ Ammospermophilus 195-45-39-14; 33.5 gr.
near Smith Creek Cave, 5,800 ft.,
Mt. Moriah, White Pine Co., Nevada

June 7,

- 295 Cnemidophorus
3 mi. E Smith Creek Cave, 5,500 ft.,
Mt. Moriah, White Pine Co., Nevada.

June 8, 1937

- 296 Cnemidophorus
297 Cnemidophorus
298 Cnemidophorus
298 Uta stansburiana
✓ 299 ♂ Dipodomys microps (?) 271-159-42-14; 60.8 gr.
✓ 300 ♂ Onychomys leucogaster 119-34-19-17.5; 14.5 gr.
near Smith Creek Cave, 5,800 ft., Nevada
301 Coluber taeniatus

3 mi. E Smith Creek Cave, 5,500 ft.,
Mt. Moriah, White Pine Co. Nevada.

June 8, 1937

- 302 Phrynosoma platyrhinos
303 ♀ Cyanocephalus cyanocephalus 276-441; 99 gr.
skeleton 304 ♀ " " 275-464; 94.7 gr.

1 mi. SE Gandy, 5,000 ft.,
Millard Co., Utah

June 9, 1937

- skeleton
✓ 305 ♂ Reithrodontomys 146-70-16-16; 9.2 gr.

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1937

Catalog

1 mi. SE Gandy, 5,000 ft.,

Millard Co., Utah

June 9, 1937

skeleton

✓ 306

♂ Reithrodontomys 136-64-16-16; 10.6 gr.

✓ 307

♂

"

146-67-17-15; 13.3 gr.

✓ 308

♂

Dipodomys 275-159-40.5-15.5; 65.4 gr.

✓ 309.

♀

"

249+-131+-40-14.5; 61.5 gr.

♂

near Smith Creek Cave, 5,800 ft.,

Mt. Moriah, White Pine Co., Nevada.

June 9, 1937

✓ 310

♀

Neotoma lepida 280-119-29-31; 125.1 gr.

✓ 311

♀

Peromyscus crinitus 164-83-18-19; 13.7 gr.

✓ 312

♀

Dipodomys 272-151-41-15; 59.2 gr.

2 mi. E Smith Creek Cave, 5,600 ft.,

Mt. Moriah, White Pine Co., Nevada.

June 10, 1937

313

Phrynosoma platyrhinos

314

"

"

✓ 315

♂

Perognathus longimembris 136-73-16-7.5; 7.4 gr.

✓ 316

♂

Myotis 80-34-6.5-11-Tragus 4.5; W.S. ; 6 gr.

Skeleton.

317

♀

Myotis 84-36-7-14-Tragus 10; W.S. 245; 4.9 gr.

2 mi. W Smith Creek Cave, 6,300 ft.,

Mt. Moriah, White Pine Co., Nevada.

June 11, 1937

✓ 318

♂

Neotoma lepida 292-120-30-29; 147.0 gr.

✓ 319

♀

Myotis 96-44-8-14; Tragus 9.5; W.S. 254; 5.8 gr.

✓ 320

♀

Peromyscus crinitus 177-92-19-19; 18.1 gr.

✓ 321

♀

"

"

172-91-19-21; 17.4 gr.

Lee Arnold
1937

Catalog

2 mi. W Smith Creek Cave, 6,300 ft.,
Mt. Moriah, White Pine Co., Nevada.

June 11, 1937

- ✓ 322 ♂ Peromyscus crinitus 164-90-19-18.5; 14.5 gr.
✓ 323 ♀ " " 166-80-21-20.5; 16.5
✓ 324 ♀ Neotoma lepida 291-124-31-32; 120^{gr.}

June 12, 1937

- ✓ 325 ♀ Perognathus 91+-10+-22-11; 16.8 gr.
✓ 326 ♂ Neotoma lepida 306-126-29-30; 57.8 gr.
✓ 327 ♀ Myotis 103-59-10-12-^{skull only} Tragus 7-4.5. 27.5; 6.9 gr.

5

Henry Creek, mi. S Sandy, 5,000 ft.,
~~White Pine Co., Nevada~~ Millard Co., Utah,

June 13, 1937

- ✓ 328 ♀ Dipodomys ordii 223-120-37-13
✓ 329 ♀ " " 231-131-38-13
✓ 330 ♂ " " 236-127-40-15
✓ 331 ♂ " " 246-136-40-15

2 mi W Smith Creek Cave, 6,300 ft.,
Mt. Moriah, White Pine Co., Nevada.

June 13, 1937

- skelton
✓ 332 ♀ Eutamias dorsalis 230-95-31-22; 80.9 gr.
✓ 333 ♀ Myotis 95-38-8-12-^{skelton} Tragus 5-4.5. 27.0; 6.5
✓ 334 ♀ " 101-46-8-13-^{skelton} Tragus 8.5 W. 5.8; 7.6 gr.

June 14, 1937

- ✓ 335 ♂ Neotoma lepida 285-117-30-29; 52.8
✓ 336 ♀ Peromyscus maniculatus 150-68-21-18; 13.7

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1937

Catalog

Henry Creek, mi S Gandy, 5,000ft.

Millard Co., Utah.,

June 13, 1937

- ✓ 337 ♂ Ammospermophilus 212-4-38-13; 120 gr.
✓ 338 ♀ " 209-58-37-14; 120.2 gr.
✓ 339 ♀ " 185-38-35-12; 94.7 gr.

2 mi. W Smith Creek Cave, 6,300ft.

Mt. Moriah, White Pine Co., Nevada

June 14, 1937

- ✓ 340 ♀ Myotis ^{(1 emb.) x 3} evotis 84-38-8.5-20-Tragus 13
341 ♀ " W. 5.247; 5.1 gr.
✓ 341 ♀ " (1 emb. x 2) 94-49-8.5-12.5 Tragus 8 W. 5.260
✓ 342 ♀ " 96-49-8-13-Tragus 7.5 W. 5.266; 6.5 gr.
✓ 343 ♀ " 98-48-8.5-12.5-Tr. 9 W. 5.263; 7 gr.
✓ 344 ♀ " 89+-34+-7.5-(Eaten by ants); 5.5 gr.

June 15, 1937

3 mi. W Smith Creek Cave, 6,500ft.

Mt. Moriah, White Pine Co., Nevada

- ✓ 345 ♀ Neotoma lepidus 298-122-32-30; 39.2 gr.

2 mi. W Smith Creek Cave, 6,300ft.

Mt. Moriah, White Pine Co., Nevada

June 15, 1937

- (Emb.) ✓ 346 ♀ Myotis ^{vulcanus} 95-42-8-13-Tragus 8.5 W. 5.257; 6.8 gr.
(Emb.) ✓ 347 ♀ " ^{vulcanus} 105-44-8.5-13-Tragus 8-W. 5.273; 8.2 gr.
✓ 348 ♀ " ^{vulcanus} 99-42-8-12.5 Tragus 8-W. 5.258; 8.7 gr.
~~349 ♀ 96-40-8-13 Tragus 8.5-W. 5.263; 7.2 gr.~~
✓ 350 ♀ Myotis ^{vulcanus} 102-44-7-15 (Tragus eaten by ants); 5.5 gr.
(1 emb.)

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1937

Catalog

1 mi. W Smith Creek Cave, 6,000 ft.,
Mt. Moriah, White Pine Co., Nevada

June 16, 1937

Skeleton

- ✓ 351 ♂ Thomomys bottae 212-64-29-4; 11.5 gr.
✓ 352 ♂ " " 230-74-28-5; 14.5 gr.
✓ 353 ♀ Eutamias 214-91-32-20; 71.8 gr.

2 mi. W Smith Creek Cave, 6,300 ft.,
Mt. Moriah, White Pine Co., Nevada

- ✓ 354 ♂ Myotis evotis 81-36-9-21-Tr. 13-Ws. 252; 4.5 gr.
✓ 355 ♀ Myotis (sp?) 95-42-9-13-Tr. 8-Ws. 267; 7.1 gr.
✓ 356 ♀ " " 99-43-8-13-Tr. 8-Ws. 272; 7.5 gr.

June 17, 1937

- ✓ 357 ♂ Peromyscus crinitus 178-92-20-19.5; 16.3 gr.
✓ 358 ♀ " " 168-84-19-18; 15.5 gr.

1/2 mi. W Smith Creek Cave, 6,000 ft.,
White Pine Co., Nevada

Skeleton

- ✓ 359 ♂ Spilogale phenax 332-117-41-24; 196.5 gr.

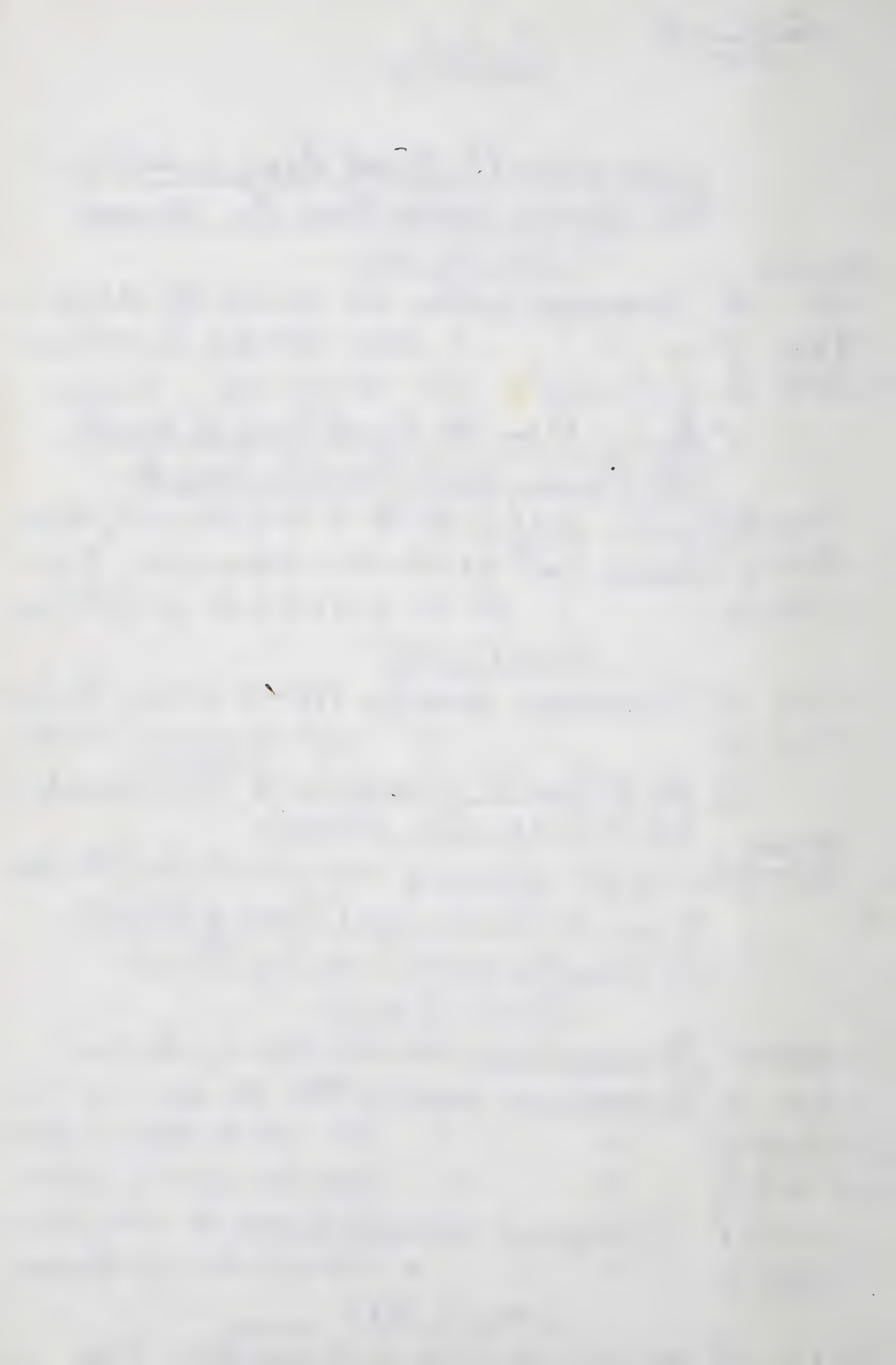
2 mi. W Smith Creek Cave, 6,300 ft.,
Mt. Moriah, White Pine Co., Nevada

June 18, 1937

- ✓ 360 ♀ Perognathus 190-103-23-12; 21.5 gr.
✓ 361 ♂ Peromyscus crinitus 169-87-20.5-19; 17 gr.
✓ 362 ♂ " " 172-38-21-20; 16.2 gr.
✓ 363 ♂ " " 164-82-20-20; 15.3 gr.
✓ 364 ♂ Peromyscus maniculatus 169-70-20-21; 20.1 gr.
✓ 365 ♀ " " 167-67-20-19; 18.6 gr.

June 17, 1937

- ✓ 366 ♀ Myotis 99-47-8-13.5-Tr. 8.5-Ws. 273; 7.3 gr. (emb.)



Lee Arnold
1937

Catalog

2 mi. W Smith Creek Cave, 6,300 ft.,
Mt. Morich, White Pine Co., Nevada

June 17, 1937

^{Skeleton}
✓ 367 ♀ Myotis evotis 90-38-8-20.5-T. 13-US. 260; S. 89r.

^{Skeleton}
~~368 ♀ Myotis (rejected)~~

369 Spotted Night Snake

370 Western Skink

½ mi. E Mt. Morich, 10,000 ft., White
Pine Co., Nevada

✓ 371 ♀ Collospermophilus 241-81-38-17

Hendry Creek, 9,100 ft., 1½ mi. E
Mt. Morich, White Pine Co., Nevada

June 20, 1937

✓ 372 ♂ Sorex 151-66-20-7

✓ 373 ♂ Microtus 171-58-21-13

✓ 374 ♂ Peromyscus maniculatus 158-69-20-18

June 21, 1937

✓ 375 ♂ Sorex 146-67-20-7

✓ 376 ♂ Thomomys 221-72-29-5.5

^{Skeleton}
✓ 377 ♂ Microtus 142-41-20-14

^{Skeleton}
✓ 378 ♂ Peromyscus maniculatus 143-75-19.5-18

June 22, 1937

^{Skeleton}
✗ 379 ♀ Sorex 166-70-17-8

Hendry Creek, 8,000 ft., 2½ mi. E Mt.
Morich, White Pine Co., Nevada

June 21, 1937

Skull only

✓ 380 ♂ Eutamias quadrivittatus (no measurements possible)

La Amolel
1937

Catalog

Hendry Creek, 4,200 ft., 8 mi. SE TT.

Florida, White Pine Co, Nevada

June 22, 1937

381 Pituohis ceterifer

June 23, 1937

✓ 382 ♀ Reithrodontomys megalotis 147-78-17-15

✓ 383 ♀ Peromyscus crinitus 175-90-20.5-21.5

Skeleton

June 24, 1937

384 Thomomys ordinoides

Arnold, Lee

1937

California, Nevada, Utah Oregon

Itinerary

May 24, 1937 - June 23, 1937

Lee Arnold

815 Avalon Court
Mission Beach
~~San Diego~~

Lee Arnold
1937

Itinerary

May 24, 1937 Reno, Washoe Co., Nevada

Our party, consisting of Dave Johnson, Dr. Henry Fitch and myself, left the Museum of Vertebrate Zoology in Berkeley, Calif. at 9:30 A.M. May 23, 1937 in a 1928 Dodge truck. Our journey to this point was via Sacramento, Roseville, Auburn, and Truckee. Yesterday evening we made one stop 1 mile northeast of Towle, Placer Co. for the purpose of collecting and observing any vertebrates that might be in that vicinity. During the brief stop of approx. $\frac{1}{2}$ hour I saw two ♀ (one) Sceloporus graciosus gracilis, one of which I was able to collect. Dr. Fitch collected two Garter Snakes and one Skink on this stop while Mr. Johnson reported having observed a chipmunk. While traveling along the highway near Carpenters flat Dr. Fitch reported having seen a Porcupine in an oak tree along the road. Near the same locality I noted two Chickadees which had been run over on the highway. At the stop 1 mile northeast of Towle I might mention that I observed a number of Raccoon tracks along the creek. At the same spot I noted a pair (?) of Mountain Chickadees rittering about in the bushes to one side of the creek. On closer observation I noted that they seemed particularly interested in several small woodpecker holes (?) in two dead stumps beside the creek. The lowest of these holes (four in all) was about 8 feet high and the highest about 13 feet. One of the birds in particular seemed especially interested in examining the contents of the

Lee Arnold
1937

Itinerary

May 24, 1937 Reno, Washoe Co., Nevada

holes. It would fly from the entrance of one hole to the entrance of another and poke its head in the ~~entrance~~ opening. We spent the night alongside of the Truckee river about 20 miles west of Reno but we did not set out any traps.

May 25

Warm Spring, 4000ft., 9 mi. E Amedee, Lassen Co., Calif.

Yesterday we left Reno, Nevada at 10:30 A.M. on highway # 395.

We continued north on this road as far as Doyle. Here we turned to the right and continued via dirt road to the present location.

The area between Doyle and our present location is characterized by low, scattered salt bushes which cover the floor of this broad uneven valley. One thing of interest to me was the presence of a Bald Eagle about 12 miles NE of Doyle. This bird was apparently after some sort of prey when first observed. It was flying about 15 feet from the ground. Three times it swooped down to the ground and thence back up as if after some sort of animal. Finally it perched on a low bush and watched our car.

The bird was just getting its white feathers around the head region and the tail was gray in color. At about $\frac{1}{2}$ mile south of Colneva I shot one imm. Citellus mollis. Dave Johnson shot three of the same species ~~some~~ 2 mile or so south of here (Colneva).

We arrived at Warm Spring in the early afternoon. The area around the springs is typical brushy desert, but because of the presence of water, green trees and grass are found here.

~~Along~~ Along the east line of the farm at Warm Springs is a row of large Fremont Cottonwood trees, ^{which} we are camping beneath. ~~these~~. Yesterday afternoon I saw a Red-tail Hawk carry a snake into the top of one of these

Lee Arnold
1937

Itinerary

May 25

Warm Spring, 4000 ft, 9 mi. E. of Medee, Lassen Co., Calif.

cottonwoods. On closer observation I discovered a nest in the top branches of the tree. There are quite a number of large hawks in this area. Those identified included Rough-leg Hawks, Red-tailed Hawks, Prairie Falcon (?), and several other broad-winged hawks (probably Swainson). The limiting factor on the abundance of these birds seems to be the presence of suitable roosting and nesting sites. Almost every tree of any size seems to be occupied by these birds at night. I have noted several Bullock Oriole nests & Say Phoebe nests in this area. In one case, an old barn $4\frac{1}{2}$ Mi. WNW of Steacy we found young Say Phoebes about $\frac{1}{2}$ grown. Barn Swallows and Cliff Swallows seem to be fairly common in this area. Several of these are nesting around the buildings at Warm Spring. Last night we set out traps $4\frac{1}{2}$ Mi. WNW of Steacy, Lassen Co., Nevada. I set out 60 traps. The first 30 were in salt hush surrounding an old deserted farm. The last 30 were set some 500 yards east of here in a more sandy spot where the salt hush was more sparing. In the traps set around the farmhouse I caught 9 specimens. They are as follows:

<u>Dipodomys (ordii?)</u>	1 (2♀; 2♂) (1♂)
<u>Dipodomys merriami</u>	4 (2♀; 2♀)
<u>Peromyscus maniculatus</u>	1 (♂)
<u>Perognathus</u>	3 (1♀; 2♂)

In the area east of the farm I caught:

<u>Dipodomys (ordii?)</u>	3 (2♀; 1♂)
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1937

Itinerary

May 26

Warm Spring, 4000 ft., 9 mi E Amedee, Lassen Co., Calif.

Last night I was assigned to set out a trap line around the cultivated alfalfa field to the south of Warm Spring proper. I set out 108 traps, most of which were in the grassy plots along the fence of the farm. In all I caught 18 Peromyscus maniculatus and four Reithrodontomys. I saw no signs whatsoever of Microtus. I preserved all of the "Reithros" and one of the Peromyscus. Accounts on the habitats of these will be found in the species account. Yesterday evening while setting out the traps I shot one small Sylvilagus near the south end of the alfalfa patch. This morning I shot an adult at the same locality. In the brush next to the field south of the alfalfa patch I found the remains of a Cackling Goose. I asked the attendant at the ranch if these occurred here in the winter and he said that at times large flocks forage in the field. He claims to have fed them quite some corn last winter. At several times during the last few days I have seen a pair(?) of Mallard Ducks flying south of the alfalfa patch. At one time I saw three of these birds — 1 ♂ & 2 ♀. The male was chasing ^{one of} the ♀ much as might be expected of mated or mating birds. If I have time I am going to try to locate any possible nesting sites of these ducks. Brewer Blackbirds are very numerous around this field. While setting traps

CHAPTER 1

The first chapter of the book is devoted to a general discussion of the principles of the theory of the structure of the atom. It begins with a brief review of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The second chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The third chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The fourth chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The fifth chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The sixth chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The seventh chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The eighth chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The ninth chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

The tenth chapter is devoted to a detailed discussion of the atomic model proposed by Rutherford and Bohr. It begins with a discussion of the experimental facts which led to the discovery of the electron, and then proceeds to a discussion of the atomic model proposed by Rutherford and Bohr. The chapter concludes with a discussion of the wave theory of light and the photoelectric effect.

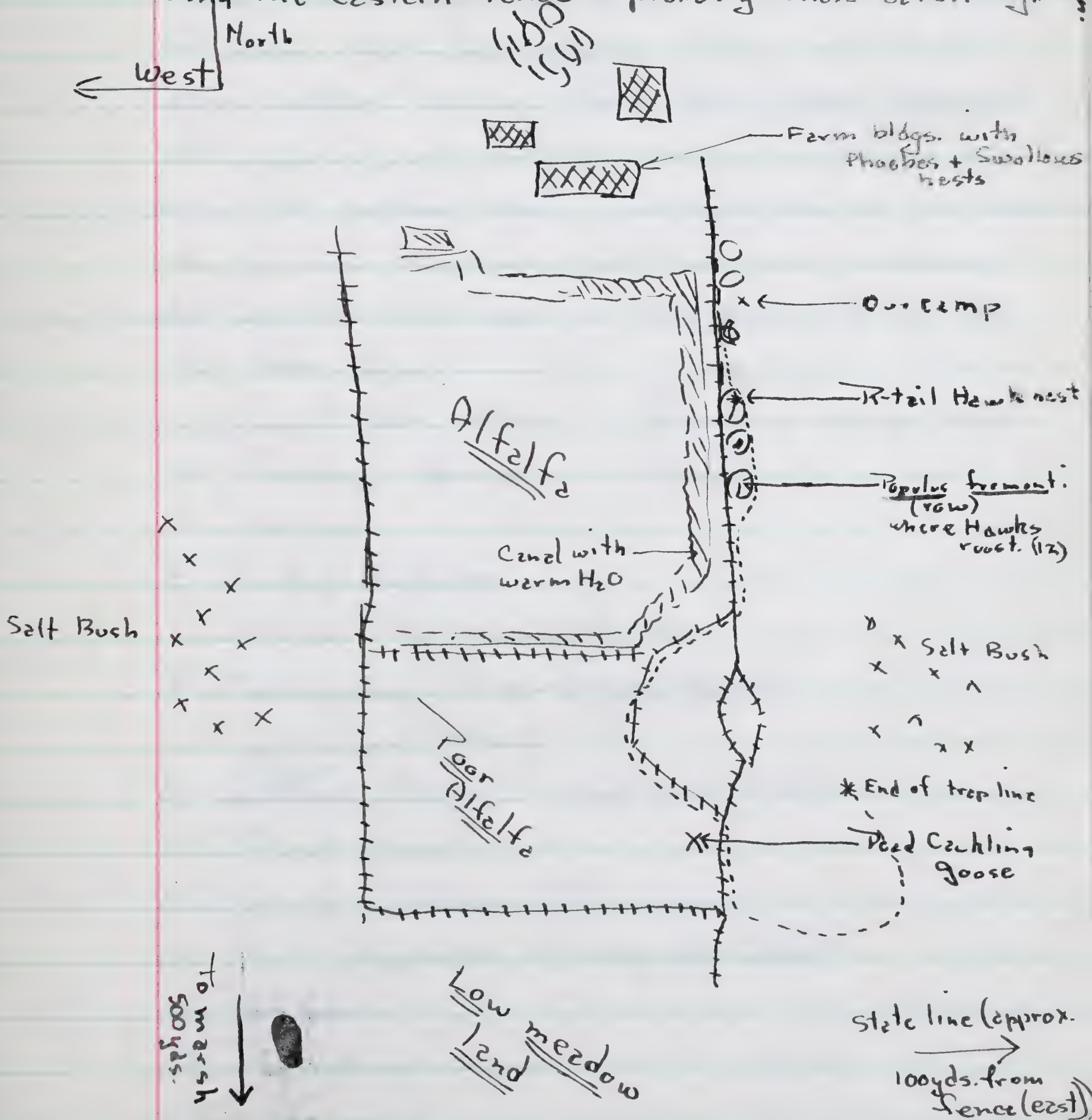
Lee Arnold
1937

Itinerary

May 26 Warm Spring, 4,000 ft., 9 mi. E Amedee, Lassen Co., Calif

I have noted five nests in particular and have every reason to believe that there are many more.

Below is a rough sketch of the area around the camp showing various items of interest and the route of the trap line last night. Numerous rabbit skulls were found along the eastern fence—probably those eaten by hawks.



Lee Arnold
1937

Itinerary

Warm Spring, 4000ft., 9mi. E. Hemedee, Lassen Co., Calif.

May 26, Hawks. While writing these notes I saw a Cnemidophorus slowly walking along a dirt bank about 50 yds. from camp. With the help of Fitch and Johnson I was able to shoot it. While procuring this specimen Johnson saw a Crotaphytus which I also shot (only after many attempts of the group to catch it by hand). It seems that Crotaphytus allows one to get closer without moving than does Cnemidophorus but when a person gets too close (i.e. 2 feet) it rapidly runs to another bush. Inasmuch as we are leaving this location today I will here give a nominal list of the birds seen in this vicinity in the last three days:

1. Great Blue Heron (dead one seen by Fitch)
2. Cackling Goose (dead)
3. Mallard
4. Turkey Vulture
5. Western Red-tailed Hawk
6. Ferruginous Rough-legged Hawk
7. Swainson Hawk (?)
8. ^{Bald} Golden Eagle (about 5 mi. S.W.)
9. Marsh Hawk.
10. Prairie Falcon (?)
11. Coot (remains of very dead bird)
12. Killdeer
13. Mourning Dove
14. Poorwill

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1937

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Warm Spring, 4000ft., 9mi. E. Medee, Lassen Co., Calif.

May 26, 15. Pintail Duck (1 ♂)

16. Wilson Phalarope

17. Avocet

18. Redhead

19. Spotted Sandpiper (2)

20. Red-wing Blackbird

21. Western Kingbird

22. Western Wood Pewee (coll.)

23. Cliff Swallow

24. Barn Swallow

25. Sage Thrasher (coll.)

27. Western Robin

28. White-rumped Shrike

29. Cassin Solitary Vireo

30. Yellow Warbler

31. Red-winged Blackbird

32. Meadowlark

33. Brewer Blackbird

34. Bullock Oriole

35. Lazuli Bunting

36. House Finch

37. English Sparrow

Lee Arnold
1937

Itinerary

Warm Spring, 4000ft., 9mi. E. Medee, Lassen Co., Calif.

May 26, It is interesting to note that about $\frac{3}{4}$ mile from the spring is found a marshy area where water which is not used for irrigating accumulates.

The water birds seen in and around this marsh are listed on the nominal list. From the actions of some of these birds (namely Aracets) I would predict that they may be nesting in this area.

May 27 Yesterday afternoon while around camp Johnson shot a Sage Thrasher. This bird, which was very Mockingbird-like in general appearance was running along the ground in much the same manner as would a Hermit Thrush. It would run a few steps, stop & look and then if it did not see any likely food it would run on. Last night I set out 73 traps on the flat NE of camp. The area where the traps were set was characterized by scattered saltbush and other small plants. I caught the following:

Perognathus parvus 1 ♂

Perognathus longimembris 1 ♀

Microdipodops pallidus 1 ♂

Eutamias minimus 2 ♂ - Adults 2 ♂ young

Dipodomys microps(?) 1 ♂ 1 ♀

Citellus mollis 1

The immediate habitats of the species mentioned will be found in their respective species accounts. Last night at dusk I shot a bat which was flying over the alfalfa field. As the alfalfa

Lee Arnold
1937

Itinerary

Warm Spring, 4,000 ft., 9 mi. E. Hedee, Lassen Co., Calif.

May 27

is about 2 ft. high and it was impossible to find the bat in the dark I waited until this morning to hunt for it. Much to my surprise I was able to find it quite easily. Although a wing was broken and a shot had cut through the heavy shoulder muscles the bat was still alive. It was a Myotis (sp.?). Several other similar appearing bats were seen but none were tagged. While shooting bats the large hawks roosting in the cottonwood trees would fly about—frightened by the shots. At one time I counted over 30 in the air at once. They were all broad-winged hawks—with the exception of a few harriers (Marsh hawks) but because of the poor light I could not make out the species. It was interesting to me that such large flocks should roost together in one locality at a time of the year when nesting is in full swing. Could it be that these are young birds for the most part or are they old birds which have not as yet started to nest. Because of the great numbers I am somewhat inclined to favor the former. There are great numbers of Mourning Doves around this locality. At one time I observed young birds just out of the nest (2). Out of seven nests of Brewer Blackbirds observed six had eggs and one had half grown young. For the last two days the weather has

Lee Arnold

1937 Warm Spring, 4,000 ft., 9 mi. E. Amedee, Lassen Co., Calif.

Itinerary

May 27

been warm and clear. It is interesting to note that English Sparrows are common in this out of the way locality. Yesterday I observed a pair mating on a barbed wire fence. For the last two evenings I have heard coyotes howling. Other carnivores of the region have not been noted. I saw Bobcat tracks south of the alfalfa patch in the soft mud yesterday. Fitch found some old gopher workings about a mile south of camp in a meadow resulting from the water overflow. He & Johnson set traps but as yet have caught nothing. The attendant here on the ranch says that he has caught two gophers since he has been on the place (7 yrs.). Yesterday I saw Western Kingbirds carrying nesting materials.

May 28.

Horse Canyon, 5,800 ft., NW Tehrum Pk., Washoe Co., Nevada
Yesterday at noon we left Warm Spring enroute for Fox Mountain (alias Tehrum Peak). We went by way of Flannigan and Pyramid. Between Warm Spring & Flannigan were great numbers of Citellus mollis. This seems to be the height of their season of activity. We stopped at Pyramid, which is just west of Pyramid Lake and asked as to how to get to Tehrum Peak (Fox Mountain). The man there informed us that the north side was the most likely place and told us how to get to Horse Canyon. After a stop at Round Hole for gas we cut

Lee Arnold Horse Canyon, 5,800 ft., Pahrum Pk., Washoe Co., Nevada
1937

Itinerary

May 28, across the south end of Snake Creek Desert. In the low brush of this region I collected two lizards (1 Cnemidophorus & 1 Crotaphytus). After traveling on a very poor road along the west base of the Fox Mountain Range for about ten miles we arrived at the narrow mouth of Horse Canyon. We travelled about 3 miles east up Horse Canyon to our present camp site. In these three miles we rose from 4,000 ft. (the desert floor) - to 5,800 ft. (Our present camp site). This area where we are now camped is characterized by the presence of Junipers on the side hills and Quaking Aspen in the low areas along moist places. Other plants such as willow are also found along the stream. The ground on the side hills is very thin and rocky but in the hollows it is very rich. Because of the presence of water several patches of alfalfa and garden plants are cultivated by the farmer and miners in the canyon. The sides of the canyon are very steep and rocky. This morning I went up to the mines on the north side of the canyon. One of the miners took quite an interest in my work and was to help me find some bats in one of the shafts. Evidently the bats had left the mine where he had seen them for a close search of the shaft revealed nothing. He told me

Lee Arnold Horse Canyon, 5,800 ft. Pahrum Pk. Washoe Co., Nevada
1937

Itinerary

May 28, to go through all the other mines on the side hill and see what I could find. In the highest mine from the floor of the valley (approx. 1,000 ft.) I found a Corynorhinus (Lump-nosed Bat) hanging from the roof of the chamber about 75 feet from the entrance. I collected this. It was interesting to note the way the long ears were folded back over the sides of the head of the bat in a circular manner. In all I went to the ends of eight shafts (tunnels) which varied from twenty to several hundred feet in length. In the first cave, the one the miners were working in, I found nothing but the remains of a Neotoma cinerea nest. The miners showed me a dead adult ♀ rat which I took back to camp later. They said that they had not killed the rat and had no idea of how it was killed. In the 2nd mine I found nothing. In the 3rd I found fresh cuttings and nests of wood rats. At the very end of the mine I found three open nests on the floor of the tunnel. These nests were built much like a bird's nest (i.e. Calif. Jay) and were not covered over in any way. At the very end of the shaft was a narrow split in the rock which evidently was used as a refuge place for the rat when molested. There was fresh droppings and urine on the floor of the mine near this opening so I surmised

Lee Arnold Horse Canyon 5600 ft. Pahran Pt. Washoe Co., Nevada
1937

Itinerary

May 28, that the rat must have just entered the crack when it heard me approaching. The floor of the tunnel was covered with dung. This was in the form of pellets about $\frac{1}{2}$ inch long and $\frac{1}{4}$ inch across. I later found out that these were probably porcupine droppings. From the great numbers of these droppings in all of the mines and the absence of the mammals from the mines at this time of the year I presume that they are used as places of refuge in the winter. From the miners around here I have found that quite a few of the mammals inhabit the aspen trees in the winter. In the 4th cave I found two small mice scampering about trying to find a way out at the far end of the mine when I had shut off their means of escape. I was able to catch one of these (Peromyscus ~~gambeli~~ ^{menigulatus}). At the mouth of this same mine I found the nest of a Say's Phoebe with 4 oval, white eggs in it. The nest was set on a ledge and contained very little mud. The most of the material of the nest seemed to be moss. The two adult birds hovered around the entrance of the shaft while I examined their nest. In the fifth cave I found nothing but Porcupine droppings. In the 6th the floor was covered by about five inches of water. It was

Itinerary

May 28, apparent, however, that wood rats were present by the sign along the ledges of the cave. Evidently they hopped from ledge to ledge to avoid getting into the water. The 7th cave contained nothing of interest while the 8th cave was partly submerged by water.

May 29. Yesterday afternoon I ran a trapping of 75 traps west of the camp. Fifty of the traps were along or near the streambed while the rest were in the brush up a side canyon below the location of the mines. I also set out four gopher traps (sets) near camp and one about $\frac{1}{4}$ mile down the road. In two of the mines I set rat traps for wood rats. In the traps set along the creek I caught three Peromyscus maniculatus and one Microtus mordax. In the traps set up the side canyon I caught one Perognathus parvus. In the traps set in and around the mines I caught one ♂ Neotoma cinerea and two Peromyscus maniculatus. In the gopher traps near camp I caught one ♀ Thomomys quadratus. The habitat of these specimens will be described in the species accounts.

May 30 Yesterday afternoon Dr. Fitch and I drove down canyon to set our traps. We stopped at a farmhouse on the way down to enquire as to where we could find various animals. The fellow living there told us

Lee Arnold Horse Canyon, 5800ft., Pahrom Pk., Washoe Co., Nevada
1937

Itinerary

May 30, the locality of a Coyote which had been in a trap since last winter. We also found out that several years ago squirrels had been abundant near the mouth of the canyon but in late years they have disappeared. I do not know what species these were, however. On the way down valley we set two pairs of gopher traps in holes in an alfalfa field which had been abandoned. I set 50 traps farther down canyon along the dry creek bed and in the scattered brush on the flat and ten sets up a small side canyon. We then went down to the mouth of the canyon and out onto the floor of the desert. Here I set 43 traps. About $\frac{1}{2}$ of these were among ~~the~~ bushes on hard, windswept ground while the rest were over hilly, sandy country. In both cases the bushes averaged about 8 feet apart. This morning we broke up camp before going around to the traps. In the three remaining gopher sets that were around camp I had two Thomomys quadratus. On the way to the traps in the mouth of the canyon I picked up a coyote skull which I had been told about. In the traps (50) set ^(2♂ + 2♀) along the creek bed I had 4 Perognathus parvus and 2 Peromyscus maniculatus (1♂ + 1♀). None of the 10 sets up the side canyon had been disturbed. In the sets on the desert floor to the east of Smoke Creek desert I had 1 Perognathus formosus ♀

Lee Arnold
1937

Horse Canyon, 5,800ft, Pahreum Pk., Washoe Co., Nevada

Itinerary

May 30

6 Perognathus longimembris (3♂ + 3♀)

1 Dipodomys merriami (♂)

2 Dipodomys ordii (?) (2♀)

While gathering in my traps I was startled by a two foot rattlesnake beside my trap. When I attempted to catch the snake it crawled into a hole (Probably Dipodomys). The birds seen in the Horse Canyon vicinity were:

1. Western Red-tailed Hawk
2. Cooper Hawk
3. Horned Owl (By Johnson)
4. Hummingbird (sp.?)
5. Red-shafted Flicker
6. Western Kingbird
7. Western Flycatcher
8. Say Phoebe
9. Ash-throated Flycatcher
10. Western Wood Pewee
11. Horned Lark
12. Cliff Swallow
13. Violet Green Swallow
14. Barn Swallow
15. Black-billed Magpie
16. Thrasher (sp.?)
17. Western Robin
18. Gnatcatcher (sp.?)
19. White-rumped Shrike
20. Western Warbling Vireo

Lee Arnold Horse Canyon, 5800 ft., Pahrump Pk., Washoe Co., Nevada.
1937

Itinerary

- May 30
21. Lutescent Warbler
 22. Tolmie Warbler
 23. California Yellow Warbler
 24. Brewer Blackbird
 25. Bullock Oriole
 26. Western Tanager
 27. Black-headed Grosbeak
 28. Lazuli Bunting
 29. House Finch
 30. Purple Finch
 31. Lawrence Goldfinch
 32. Green-tailed Towhee (abundant)
 33. Spotted Towhee
 34. Sage Sparrow
 35. Western Lark Sparrow
 36. Fox Sparrow (sp.?)
 37. Unknowns - several

Yesterday afternoon while setting traps I caught two Phrynosoma platyrhinos on the east side of Smoke Creek Desert.

May 31 Fox Canyon, 4800 ft., 4 mi. S Pahrump Pk.,
Washoe Co., Nevada

Weather: Fair and cool - mild breeze this afternoon. Camp: In wash next to newly made cabin and watering trough (Probably that made by government for Indian stock.) Low hills on both sides. Pyramid Lake visible to the south when on hill. Vegetation: Low

Lee Arnold Fox Canyon, 4,800 ft., 4 mi. S Borrum Pk. Washoe Co., Nev.
1937

Itinerary

May 31, scrubby. Scattered - on average 1 bush every 4 feet.

Soil: Sandy in certain spots (namely creek and arroyo bottoms), silt on hills and packed, dry earth prevalent. We arrived here yesterday about 3 o'clock P.M. After setting up camp I set out a trapline of 65 traps. This morning I had: ~~4~~ Dipodomys ordii (?) (3♀ + 1♂)

3 Perognathus longimembris (2♂ + 1♀)

2 Peromyscus maniculatus (1♂ + 1♀)

The trapline was laid in the hilly country to the NW of camp. The locations of various animals will be seen under the species accounts.

This locality is the most barren of those stopped at on this trip. Few birds have been seen.

Those that have are:

1. Western Kingbird
2. Ash-throated Flycatcher
3. Western Meadowlark
4. Magpie
5. Sage Sparrow
6. Sage Hen (by Johnson)
7. Western Nighthawk

Lee Arnold
1937

Itinerary

June 1 Reno, Washoe Co., Nevada

We are stopping there for orders & supplies. Last night we did not set out any traps so that we might get an early start this morning. In coming from our camp to the north end of Pyramid Lake I shot an adult ♀ Amnospermophilus. It was sitting in the top of a bush watching me when I shot. It had very large tits and was apparently nursing young. When I went over to pick it up two $\frac{1}{3}$ grown young ducked down a hole under the bush. I shot two Cnemidoporus at the same locality. En route for Reno we came by way of Pyramid, and . On the NW side of the lake we saw numerous Amnospermophiles. From Pyramid we came directly to Reno.

near Smith Creek Cave, 9800 ft., Mt. Morris, White Pine Co., Nevada.

June 3

Yesterday we traveled all day. We left our temporary camp site along the highway early in the morning and arrived in Baker, Nevada at dusk. En route we saw various mammals.

At East Gate we saw two Marmots.

These animals were seen in a wash about 75 feet from the road. When we stopped the car they disappeared into their holes. At the same stop we saw a Rock Squirrel. At various places in the mountains we saw Chipmunks and Callospermophilus. Fitch shot one of the latter while I shot a Eutamias. The

La Arnold ^{near Smith Creek Cave, White Pine Co., Nevada}
1937

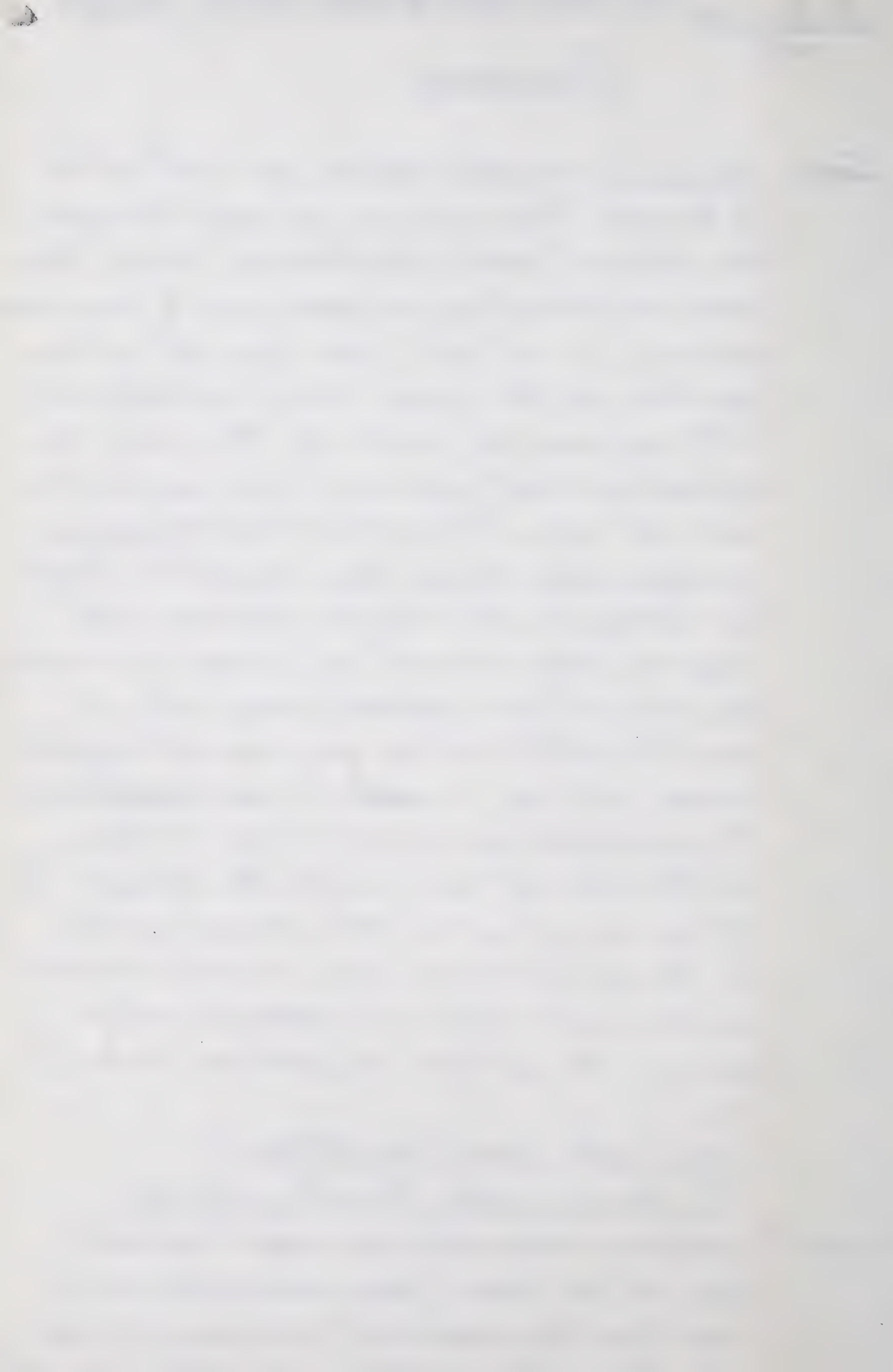
Itinerary

June 3, Eutamias escaped before we could catch it, however. This morning we went through the Lehman Caves (just outside of Baker). They were very interesting inasmuch as I have never been in a cave of that type. We did not see any bats in the cave. This is probably due to the presence of people in the cave, the comparative recent opening of the cave, and the fact that bats of this region have many caves to choose from. From here we went to Baker for Johnson to get a line on where we could camp and where we could get horses if necessary. We arrived at our present camp site at about 2:30 P.M. Just as we were entering the canyon we saw a single Prong-horned Antelope. This mammal ran across in front of the car, up the side hill and across the desert. By the time we got out of the car and up the hill the antelope was over several hundred yards from us. When we appeared on the horizon the antelope stopped and looked at us.

near Smith Creek Cave, 5,800 ft.,

Mt. Moriah, White Pine Co., Nevada.

June 4 Yesterday after setting up camp I set out a line of 100 traps. These were in a direct line down the middle of the canyon from a spot directly north of camp. Our present



Lee Arnold ^{near Smith Creek Cave, Mt. Moriah, White Pine Co., Nevada}
1937

Itinerary

June 4 camp is situated on the south side of Smith Creek Canyon almost directly opposite the Smith Creek Cave. This cave is the one in which Dr. Harrington of the Southwestern Museum is hunting for Pleistocene fossils. The purpose of our stay in this area is to get a line on the mammals of this area at present, the present floral associations and life zones, and a general idea of the relative abundance of life in this region. According to Johnson our objective is to trap systematically, note all the plants, soil changes and various physical aspects of the area trapped. Because of this I am making an effort to be specific even at the risk of repetition. When we have finished with this area I am going to attempt to map the traplines and show exactly where the animals were caught. In all I caught 37 mammals 1st night.

15 Dipodomys ordii (mostly females)

9 Peromyscus maniculatus (4 ♂ 5 ♀)

10 Neotoma lepida (6 ♂ 4 ♀)

3 Perognathus longimembris (3 ♀)

An account of the association of each of these is found in the species accounts. The traps were placed at an average of 40 feet apart so that for most of them the distance from camp can be

Lee Arnold ^{near Smith Creek Cave, Mt. Moriah, White Pine Co., Nevada}
1937

Itinerary

June 4 estimated by knowing the number of the trap in which the mammal was caught. All this is given in the species account for this day. Yesterday while climbing to the cave we noted a Prairie Falcon circling over our heads. It would call at intervals of every few seconds. Finally it perched on a ledge some 60 feet above the cave and a little to the east. I was not able to see any signs of a nest or young from the distance at which I was ^{located}. While we were in the cave a White-throated Swift flew in the entrance and disappeared in a fissure in the roof. In a moment it reappeared and flew out again. I could see no nest. Several (4) of these birds were seen flying about the entrance of the cave. This cave is about 75 feet across at its mouth and 30 feet high. It goes back into the mountain about 75 feet forming sort of a tea cup (on its side) depression. There was much sign of digging in the earth on the floor of the cave. At several places in the roof ~~were~~ ^{located} large openings (from a few inches to three feet across). These seemed to lead back into the rock surrounding the cavern. We attempted to climb up one of the larger openings but

Lee Arnold near Smith Creek Cave, Mt. Moriah, White Pine Co., Nevada
1937

Itinerary

June 4. did not succeed. I saw several Piñon Jays at various times on the side hill in back of camp. A Say Phoebe has its nest on the overhanging ledge which we cook under and sleep under. This bird is becoming accustomed to our presence and getting quite bold in feeding its young when we are near.

June 5 Yesterday afternoon I set out two groups of traps for carnivores. One of these was in the creek about $\frac{1}{4}$ mile west of camp while the other was on a trail some 800 yards farther. After setting these I went up the valley in search of more sign. I saw none whatsoever. This morning I ~~set out~~ made three more carnivore settings. While doing this I located two fresh gopher diggings which I set traps in. These diggings were about a mile west of camp in the rocky soil on the south slope. In one instance the gopher appeared to be feeding on the roots of prickly pear cactus. I saw a small rabbit about 100 yards up a talus slope of pea-sized rocks on the north side of the canyon. I am not sure of its identity. I set a steel trap in the burrow which it appeared to enter. In appearance it was similar to a Pigmy Rabbit but the habitat was not right and I did not get

Lee Arnold ^{near Smith Creek Cave, T.H. Morish, White Pine Co., Nevada}
1937 Itinerary

June 5 Sufficient opportunity to identify it positively. After setting the traps I continued up the canyon for about three miles. About two miles west of camp is a large grove of aspen (cottonwood?) trees. This grove must be at least 15 acres in extent. At this point the road (if one could call it that) ended. From here I followed the main stream up a heavily brushed canyon to the south. I progressed up this branch canyon until the bushes got so thick that I had to climb up on the ridge to make any progress at all. From this vantage point I could see that the canyon continued for quite some distance so turned around and headed for camp. — I failed to mention that on the way up I shot an Amnospermophilus. This mammal was sitting on a rock on the south side of the bottom of the canyon. It was a ♀ and was apparently nursing.

June 6 Yesterday afternoon Johnson and I drove down the Snake Valley to a ranch 1 mile east of Gandy Utah. The ranch consisted of approx. 50 acres of alfalfa & few fruit trees and about 50 acres of semi-marsh land where the surplus water accumulated. We set 9

Lee Arnold ^{near Smith Creek Cave, T.H. Horn, White Pine Co., Nevada}
1937

Itinerary

June 6 sets of gopher traps in the edge of one of the big alfalfa fields. The farmer had never trapped or poisoned these rodents and consequently they were very abundant in the region of the green plants. Some of the holes were quite large. This was partly due to the ease with which the gophers could dig in the soft ground and the washing out of the burrows by irrigation water. While setting the traps I saw a Black-tailed Jack Rabbit and a bird which looked much like a ♀ Phoeasant. Because of the distance I could not be sure of the latter. After setting our traps here we went back down (south) the road 4 mi. to an open area where hard packed silt had blown up to form sand dunes. I set out 95 traps east of the road most of these were grouped in or around the sandy areas where accumulations of silt had blown up. In several of these areas about the dunes Dipodomys sign was abundant. In many places they would burrow almost horizontally into the dunes in such a manner as to give the ^{appearance} ~~presence~~ of building several stories high. In front of these colonial dwellings were many little holes scattered about on the

Lee Arnold
1937

near Smith Creek Cave, 5,800 ft. Alt. Moriah, White Pine Co., Nevada

Itinerary

June 6 level. Apparently these shallow holes were used as store chambers. In one I found leaves of greasewood tucked neatly away. On the way back to the truck I found a skull of Bynx rufus. Upon going to the traps this morning I found:

1 Dipodomys ordii(?) ♂

11 " microps(?) 5 ♂, 6 ♀

4 Peromyscus maniculatus 2 ♂, 2 ♀

In the gopher traps set at the alfalfa field we caught 6 gophers — 5 ♀ and 1 imm. ♂. The man at the farm told us that he had mounds in his marshland. He described their surface runs and diggings perfectly so we went down to see if it was possible. After searching the field we decided that what he had seen must have been Microtus. We caught six garter snakes (Thamnophis ordinoides) along the irrigation ditch and saw several more. Upon returning to camp I went around to my carnivore traps. I had nothing. In one of the gopher traps (approx 1 1/2 miles west of camp) I had an adult ♀ gopher. It was apparently botched. I am saving the skeleton rather than the

Itinerary

June 6 skin. On the way back to camp I shot a Cnemidophorus about 100 yds NE of camp.

June 7 Last night I set out a line of 42 traps West of Camp. 30 of these were on the piedmont deposits on the south slope while the remaining 12 were on the flat bottom land north of the creek. In the traps on the hillside I caught:

1 Peromyscus crinitus ♂

1 Adult " maniculatus ♀

1 Imm. " " ♀

1 Adult ♂ Neotoma ♂

1 Imm. ♂ " ♂

In the traps on the level bottom land I caught:

1 Adult Dipodomys ~~deserti~~ ^{mickleyi(?)} ♂

1 Imm. Peromyscus crinitus ♀

3 Adult " maniculatus (2/♂)

More about the habitats of these will be found under species accounts.

On returning from my steel traps I shot an adult ♂ Hesperomorphus.

It was on a rock about 75 ft. from the place where I collected the ♀ (breeding) two days ago. I am preserving the genital tract of this individual.

About 100 yds. from camp I shot a

near Smith Creek Cave, 5,800 ft., T.H. Morich, White Pine Co., Nevada
Lee Arnold
1937

Itinerary

June 7 Cnemidophorus.

June 8 Last night Johnson, Fitch and myself drove east of camp to set out traps. I set out my line of 42 museum traps and 25 catchalives 3 miles east of camp on approximately the Nevada-Utah border. All of the traps were set among low brush ranging up to 1 foot in height. The soil was hard with patches of dust. There was a thin layer of small rocks over the ground which formed a rough surface. While setting traps I noted numerous badger holes. These were for the most part along the edges of washes where they could dig without going vertically. I noted a pair of Ravens and two Western Nighthawks while setting traps. This morning I did not have any mice in my catchalive traps. In the others there were:

4 Dipodomys (3 ♀ & 1 ♂)

1 Peromyscus maniculatus ♂

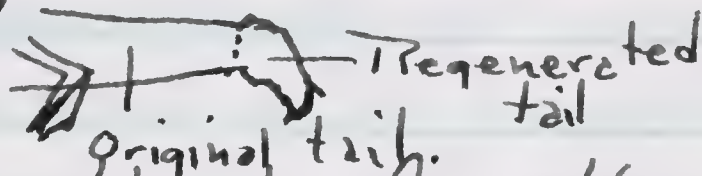
1 Grychomys leucogaster Imm. ♂

This region did not have as much sign of animals as those trapped in on previous nights. While hunting in the creek bottom near my trap line I shot 3 Cnemidophorus. One

near Smith Creek Cave, S, 800 ft, Mt. Morica, White Pine Co., Nevada
Lee Arnold
1937

Itinerary

June 8. of these had a regenerated tail which had grown downward into a keel-like structure about one inch long. This is how it appeared



I flushed a night hawk from the creek bottom. I also collected a Uta and a Phrynosoma. This afternoon while skinning I heard a flock of Cyanocephalus on the side hill. I was able to collect two; one imm., and one ad. ♀. The former I preserved as a skeleton while the latter I preserved as a skin. These birds were in a flock of about twenty mixed adults and young. About 5 o'clock this afternoon when going to my carnivore traps I saw a new type of animal to my knowledge. I was just rounding the edge of a hill about 1/4 mile west of camp when I saw it. Having stopped for a brief moment to see what might be startled by my sudden appearance around the hill I noted an animal running along the opposite side of the canyon. It was built very much like a grey squirrel. Its tail was rather bushy and was about the same length as its body.

near Smith Creek Cave, 5,800 ft., T.H. Thorne, White Pine Co., Nevada
L. Arnold
1937

Itinerary

June 8 Its color was a more or less even, pale brownish tan. I could see no definite markings of other colors although I had a very good opportunity to view the animal for a moment as it paused on a low boulder to view me. Its running method of holding its body was similar to a grey squirrel but it seemed to arch higher into the air as it ran. I was at sea as to what it was so took a long chance of collecting it before it disappeared. Evidently the shot was too fine (#10's) to bring the animal down for in spite of shooting both barrels at once the animal escaped. It ran up a ravine full of medium sized boulders—running around and climbing over them as it went. At one time it disappeared under a very large rock. I thought it had run down a hole but in a moment it appeared on the other side and continued on up the hill. All this happened in much less time than it takes to write it, however.

June 9 This morning at about 8:45 o'clock I had a better look at the animal I saw yesterday. It was about 50 ft.

near Smith Creek Cave, 5,800 ft., T.H. Moritz, White Pine Co., Nevada.
Lee Arnold
1937

Itinerary

from the spot the one was seen on yesterday. I shot at it again but apparently it was still too far away to suffer directly from the shot. When I returned to camp I identified it as a Rock Squirrel (Hesperomophilus). Last night Johnson and Fitch set traps several miles down the valley and made camp near their trapline. I set out 42 traps on the side hill southeast of camp. This area where I collected consisted of sparsely covered coarse dirt and gravel. Most of the traps were set where the hill formed about a 45° angle from the horizontal. This morning when I went around to the traps I had:

3 ~~3~~ Dipodomys microps 2♀ - 1♂
3 Peromyscus maniculatus 1 Ad. ♂; 1 Ad. ♀; 1 Imm.
2 " crinitus 1 Ad ♀; 1 Imm. ♂
3 Neotoma lepida 1 Ad. ♀ 2 Imm. ♂

June 10 Last night the three of us drove out on the desert east of camp to a spot about 2 miles east of Smith Creek Cave. I set my traps across the flat of the creek and out over the flat sandy sparsely brushed desert for a few hundred yards. On the way home I saw one Jack Rabbit and several cottontails,

near Smith Creek Cave, 5800 ft., Mt. Morris & White Pine Co., Nevada
Lee Arnold
1937

Itinerary

June 10, but was unable to get a shot at any of them. At a point about $1\frac{1}{2}$ mi. E Smith Creek Cave we stopped to shoot bats. I shot two Myotis, the species of which we are not as yet sure of. In my traps this morning I caught;

Dipodomys microps 9♀ - 1♂

Peromyscus maniculatus 3♂ - 1♀

Neotoma lepida - 2♂

Perognathus longimembris 1♂

In comparing my Dipodomys with those caught by Fitch and Johnson I have found that there are more ♀ animals caught than males. This could be due to several causes but as yet we do not know the actual cause. In as much as June we are going to move camp today, I am going to take this opportunity to sum up my opinions of this area. The birds seen near here (3 mi. radius) are:

Say Phoebe (nest under ledge in camp)

Canyon Wren

Prarie Falcon

White-throated Swift

Piñon Jay (1 ad. ♀ & 1 imm ♀ shot)

Warbling Vireo

Raven

Lee Arnold ^{near Smith Creek Caves, 5,300 ft., Mt. Horrich, White Pine Co., Nevada}
1937

Tinierexy

Western Nighthawk
Sage Thrasher (heard)
Great Horned Owl (shot by Johnson)
Western Wood Pewee

Mammals seen or caught (3 mi. radius)

Peromyscus maniculatus

" crinitus

Perognathus famosus

" longimembris

Neotoma lepida

Antilocapra americana

Onychomys leucogaster

Ammodramophilus leucurus

Otospermophilus grammurus

Myotis (sp?)

Eutamias (sp?)

Thomomys bottae

Dipodomys microps

Dipodomys ordii

Reptiles seen or Caught:

Chrotaphytes

Cnemidophorus

Sceloporus

Phrynosoma

Lee Arnold
1937

near Smith Creek Cave, 5,800 ft., Mt. Morich, White Pine Co.,
Nevada

Itinerary

Uta stansburiana

Coluber taeniatus

Pituophis catenifer

This region seems to be characterized by the simplicity of number of species of mammals. Peromyscus maniculatus, Dipodomys and Neotoma comprise the main mass of mammals. These few species are found in great abundance. They seem to overlap on each others ecologic niche. For instance Neotoma are caught in the low country where Dipodomys are to be expected while Dipodomys are also caught on the rocky side hills where Neotoma are found. The Neotoma seem to run around under the low bushes on the flat yards away from any nests or sheltering rocks. The abundance of partly grown Neotoma is significant.

near Smith Creek Cave, S, 800ft., Mt. Thorin, White Pine Co., Nevada ↑
Lee Arnold
1937

Trapping
June 4
100 traps

Trapping June 9
42 traps

Steep Hill and Cliffs

Camp
El., S, 800ft.

Thoebe Nest.

Trapping June 7
92 traps

Smith Creek

Smith
Creek
Cave
El., - 6,400ft.

2 mi. W Smith Creek Cave, 6,300 ft., Mt. Thor, White Pine Co.,
Nevada
Luc Arnold
1937

Itinerary

June 11, Yesterday we moved camp to 2 miles west of the original camp opposite the cave. We are now camping a few feet from Smith Creek in a grove of Willows. This grove covers the entire flat area of the canyon which I would say is 100 yds wide and about 20 acres in extent. About 500 yards west of camp the creek branches. Deadman Creek comes in from the south while Smith Creek continues in a NW direction. The volume of water coming down Deadman Creek is about threefold that of Smith Creek at point of junction. Our camp is on the south side of the canyon. A slope covered with small and medium sized broken rocks rises directly to the south while the north slope of the canyon is almost straight up and down and is characterized by large masses of metamorphic rock. In many places the strata can be easily seen where the rock outcrops. It is interesting to me that the south and north walls of this canyon should differ so greatly at this point. Wild Rose seems to be the dominating shrub beneath the willow trees of the grove. The only bird life at present in the grove seems to be Western Werbling Vireos. Several of these small birds are foraging among the trees.

2 mi. W. 3 mi. N. of Crestview, 6,300 ft., Mt. Shasta, White Pine Co., Nevada
Lee Arnold
1937

Itinerary

June 11, Last night we shot several bats. Most of them were small dark brown Myotis (sp?). Fitch collected one Myotis evotis. I set 45 traps along the ledges of the cliffs on the north side of the canyon. I caught:

5 Peromyscus crinitus 2♂; 3♀

4 Neotoma lepida 2♂; 2♀

It was interesting to me to find that Johnson and Fitch who were trapping on the south side of the canyon caught many Peromyscus maniculatus but no Peromyscus crinitus while I caught no Peromyscus maniculatus and several Peromyscus crinitus.

June 12, Last night we again shot at bats this time we were not so successful as previously. We got one ♀ Myotis. Inasmuch as we are breaking camp today I left my traps in the same place they were set yesterday. I caught:

6 Neotoma lepida 1 Ad. ♂; 3 Imm ♂; 2 Imm. ♀

4 Peromyscus crinitus 2 Imm. ♂; 2 Imm. ♀

1 Perognathus ♀

It was interesting to note that I caught only immature crinitus in the same trapline that I caught only adults in yesterday. Another point of interest is that I caught two imm. crinitus in the same rat trap.

The Perognathus is probably the same one

Itinerary

June 12 that I caught the tail of the night before. I am saving the Perognathus and Neotoma until I return to camp to make them up. Today Fitch and Johnson are going to pack into the mountains. We are driving the truck to the head of Henry Canyon (as far as possible) and then loading the supplies on a horse. I am then to bring the truck back to camp and continue to trap this area.

June 13 Yesterday when we were driving to the head of Henry Canyon for Fitch and Johnson to pack back into the hills we met with misfortune in that the right rear axle of the Dodge broke. Apparently the rough roads and ruts had put the finishing touches on crystalizing the old axle and this climb was the death blow to it. We were indeed fortunate in that our guide was a graduate from the Chicago School of Automobile Mechanics. He diagnosed our trouble and told us that he could fix it next Wednesday. In the meantime he caught and cooked a trout for our lunch. After getting Johnson and Fitch packed Mr. Parker and myself started walking back to the ranch about 8 miles away. En route I saw a Hairy Woodpecker. +

Lee Arnold
1937

Itinerary

June 13 spent the night at the Parker Ranch inasmuch as it was too late for me to continue home. The following morning Mr. Parker and I went out to his field of newly planted grain ^{ground} which he had scattered poisoned barley (strychnine) yesterday. I was interested in the results of the poisoning. The facts I gathered are not complete because of the possibility of the mice getting down their holes to die and the fact that coyotes and ravens had been preying on the dead animals. We found 18 *Dipodomys* killed by poison. (14 ♀ + 9 ♂). These were all of the ordii group — that is those which we have classed as ordii on this trip. They were all found in open, soft silty soil where most of the brush was missing because of previous cultivation. The only other animals that seemed to be affected by poison were Mourning Doves. I picked up two of these birds which had apparently just died and observed the scattered remains of two others that had probably died the day before and been eaten during the night. We shot four Jack Rabbits (1 Ad. ♂; 1 Ad. ♀; 2 Imm. ♂). I observed two Western Nighthawks at 10:45 AM.

Lee Arnold
1937

Itinerary

June 13, These birds were chasing one another — periodically letting out their characteristic call. While waiting for Mr. Parker to take me to the mouth of Smith Creek Canyon I shot 4 Ammospermophilus. These were: 1 Ad. ♂; 1 Ad. ♀; 2 Imm. ♀. They were making trips from the edge of the horse corral to the grain house where they would fill their cheek pockets for a return trip. In the grain house along with the grain used for stock was an opened sack of poisoned barley. According to Mr. Parker they would not touch the poisoned grain. Could it be that the internal cheek pockets of Ammo's are more sensitive to the poison — thus causing the squirrel to reject it before the poison has a chance to be deadly while there is no such "warning" in the case of the fur-lined cheek-pockets of the Pipos. On returning home (Smith Creek) I made up the Tipodomys, Ammospermophilus, Neotoma and made skeletons of a Thyotis and an Ammospermophilus.

June 14 Yesterday I went around to the trapline on the north side of the canyon. The only new catch was a Eutamias dorsalis. This is a breeding ♀. It had apparently been "gummed" by a snake for its

Le Arnold

1937

Itinerary

entire front end was covered with a slimy diu2-like substance. There was a hole torn into its side just anterior to where the trap wire clutched it. The other mammals caught were:

4 Peromyscus crinitus

2 Neotoma lepida

Last night I shot 2 adult ♀ Myotis.

I left the traps in the same locality because I did not have time to set them elsewhere.

This morning I had:

2 Peromyscus crinitus 1 Ad. ♀; 1 Imm. ♂

1 Peromyscus maniculatus Ad. ♀

2 Neotoma lepida 1 Ad ♂; 1 Imm. ♂

It is interesting to note that the Peromyscus maniculatus is the first one caught on the north side of the canyon.

June 15, Yesterday it rained for several hours. After making a cover for the supplies and myself out of the tarp I skinned the days catch.

In the middle of the afternoon the rain stopped as quickly as it had begun.

I took my traps and went up Smith Creek to see if I could find any habitats which had not as yet been trapped. After going a mile I left the traps and continued on. The canyon narrowed down in places to ~~only~~ where it was only wide enough

Lee Arnold

1937

Itinerary

June 15

for the creek and again widened to brushy meadows. As I entered one of these meadows I heard a Marmot give its warning call but I did not see the animal. There were numerous tracks of deer and coyotes and on one occasion I saw the clear track of a mountain lion. I followed the creek until it again branched. This was about $1\frac{1}{2}$ miles west of the Deedman canyon branch. At this spot a creek came in from both north and south while the actual Smith Creek continued west. I followed the creek from the north for about $\frac{1}{4}$ mile. It was dry and from the tracks in the sand often used by both deer and coyotes. I climbed to the top of a hill to the east of the canyon. From here I could see Mt. Moriah and the adjoining mountains. On the way back to camp I set out my 40 traps on the flat floor of the valley. They sampled all of the available habitats — Rose thickets — willow groves — Sagebrush flats — Sandy openings and the like. This morning I had:

2 Neotoma lepida (1 Ad ♀; 1 Imm ♀)
9 Peromyscus maniculatus 5♂; 4♀

Lee Arnold
1937

Itinerary

June 15 Last night I shot five bats: 1 Myotis
evotis and 4 Myotis (sp? - dark brown, medium
sized)

June 16, Yesterday afternoon I set 10 gopher traps
between our present camp and Smith Creek
Cave. I also set seven rat traps in the
rocks near where I saw the Rock Squirrel
on June 7. This morning I set five steel traps
near the same spot in hopes of catching a
squirrel. This morning I had 3 Peromyscus
crinitus and one Neotoma lepidus in the rat
traps. It is interesting to note that at that spot
the crinitus were apparently abundant on the
south side of the canyon while at our present
camp they are for the most part on the north
side of the canyon. It seems that these mice
prefer large boulders rather than scattered small
rocks. I caught two adult male Thomomys
talpae in my gopher traps. On the way
home from the traps I shot a ♀ Eutamias
dorsalis. It was on a large boulder on the
north side of the canyon. Last night I shot
5 Myotis. I also shot at a bird (Probably
a Pipit which was flying overhead but I did
not get it.

June 17, Yesterday afternoon I set out 33 mouse
traps on the face of the hill NE of camp.
At no place where traps were set was the

Lee Arnold
1937

2 mi. W Smith Creek Cave, 3000 ft., Mt. Thacher,
White Pine Co., Nevada

Itinerary

June 17 hill at less than a 45° angle from the horizontal. It was very sparsely covered with vegetation. The main part of this included Artemisia with occasional junipers and "grass bunches." I also set five steel traps (#1's) in the rocks near where I saw the Otospermophilus. This morning I had only two Peromyscus crinitus in the line of 33 mouse traps. In the rat traps was one Neotoma lepida while in the steel traps was one Neotoma and one ♂ Spilogale phenax. The latter was a young animal. Last night I shot 4 bats; two Myotis (sp.?) and two Myotis evotis.

June 18, Last night I left the mouse traps on the side hill NE of camp in place. In them I caught: 1 Perognathus formosus - ♀

5 Peromyscus crinitus 3 ad ♂

2 imm. ♀

3 Peromyscus maniculatus 1 ad ♂; 1 ad ♀;

1 imm. ♀

3 Neotoma lepida 1 imm ♂; 2 imm ♀.

In the rat traps set about $\frac{1}{2}$ mi. W Smith Creek Cave I caught:

3 Neotoma lepida 1 imm ♂; 2 imm ♀

Although three of the steel traps were sprung and two of these had porcupine hair in them there was nothing in them this morning. Tonight I am going

2 mi. W Smith Creek Camp, 6,300ft. T.H. Morich, White Pine Co., Nevada

Lee Arnold
1937

June 18, to set all available steel traps in this vicinity and make an effort to catch the porcupine or anything else living in the gulch. It was interesting to me to find that I was far more successful the second night of trapping on the sidehill NE of camp than on the first. Last night was much colder than the night before and there was not the wind there was the previous night. I set out 25 catch-alive traps on the flat east of camp yesterday. In them I caught 4 Peromyscus maniculatus. Yesterday evening while re-baiting my mouse traps I turned over a stone and found a Skink under it. Before I could catch it it hurried over to and under a bigger rock. Upon moving this rock I found that a small brown snake (~~probably a Faded Snake or~~ Spotted Night Snake) was hiding under it also. I captured the both of them.

Top of T.H. Morich, White Pine Co., Nevada

June 19 Yesterday about 2:30 P.M. Johnson, Fitch and Arvey returned to the Smith Creek camp. The plan was for me to go to the Hendry Creek Camp with Johnson while the rest remained at Smith Creek. Johnson and I rode to the mouth of Hendry Creek Canyon with Mr. Barker and hiked the remaining 7 miles or so to the higher mountain camp.

Top of Mt. Moriah

Lee Arnold

1937

June 9, we arrived in camp about 2 P.M.—and went to bed! This morning I started for a stroll to view the surrounding country but as I kept traveling higher and higher I decided that this is as good a time as any to go to the top of the peak. The entire top of Mt. Moriah is barren save for very few plants, none of which are not over a few inches high. As far as mammal life is concerned gophers seem to be the commonest at this high altitude. Whenever the ground levels out enough for small plants to get a foothold the gopher diggings and snap traps are to be found. I am taking back samples of the plants which they are feeding on to be identified. Among the rocks outcropping near the top of the peak I found several signs (in the form of feces) of rats and mice. The larger being about the size of Neotoma while the smaller about the size of Peromyscus. Insects seem to be the dominating fauna of the mountain top. Flies, gnats, beetles, bees, Thysanura, and related forms were observed. The birds consist of Rock Wren—(foraging on the rocks of the high tableland) and ~~White-throated Swifts.~~ White-throated Swifts.

~~2 mi. E Smith Creek Cave, 6,300 ft. TTH. TTH. TTH. White Pine Co., Nevada~~
Hendry Creek, 9,100 ft., 1 1/2 mi. E

Lee Arnold
1937

Hendry Creek, 9,100 ft., 1 1/2 mi. E TTH. TTH. TTH.
White Pine Co., Nevada

June 20

Last night I set out 50 mouse traps on the creek north of camp. All of these were directly beside or within 50 ft. of the creek. This morning I had:

1. Sorex ♂

1 Microtus mordox ♂

3 Peromyscus m. 1 ad ♂ 2 imm.

The Sorex had apparently run over the trap rather than having been in quest of bait. This morning I also went up to the outcropping above camp where I had set 10 rat traps and three steel traps. I had nothing although much of the bait was gone and many mouse droppings were found on the traps.

From all appearances the rats once were common on this ledge but at present none are living here. All of the droppings of rats were old enough to have been deposited a year or more ago. At one spot I set for porcupine in the entrance of a small cave which showed much old porcupine skin but had no success. Yesterday while coming down the mountain I shot a ♀

Lee Arnold
1937

June 20, Callospermophilus. It was in a habitat of pine (Limber) Fir and aspen.

June 21, Last night I had fifty traps set along the creek north of camp in the same spots as on the previous day. I caught:

1 Sorex ♂

1 Thomomys mordax imm. ♂

5 Peromyscus maniculatus 2 ad ♂; 2 imm ♂; 2 imm ♀

Both yesterday and today the Sorex seemed to have simply run over the trap rather than by attempting to eat the bacon or oats. After skinning the specimens I went down the canyon about two miles to the point where we had cached some food on the journey to camp. Just as I was entering a small semi-clear space among scattered aspens beside the creek I was startled by a Marmot jumping up about 10 feet in front of me. As I was planning to carry a load of canned goods back to camp I had left my gun at camp—consequently I was helpless to try to collect the woodchuck. It ran toward the creek for about 50 feet and then disappeared in the thick brush along the margin of the creek. I followed

Lee Amall
1957

June 21, it is for as I could before losing it. I looked around the surrounding territory thoroughly for signs of holes or feces piled on rocks. The most likely place for a burrow was on the side of a overgrown talus slope west of the spot where I saw the marmot. Close search did not reveal anything, however. On the opposite side of the creek was a high bank of rock where woodrat sign was abundant. To one side of the face of the escarpment and burrowed under it was a hole large enough for a marmot although there was no feces to be seen. Today I went down to the spot for the sole purpose of seeing if I could shoot or trap it. I waited around for several hours but did not see or hear it. I set three steel traps in and around the hole ^{under} on the side of the cliff.

June 22, Last night I set 50 mouse traps along the creek. I caught:

1. Sorex plutris

5 Peromyscus maniculatus

Today we are moving camp so I will try to summarize what I have noted in this area.

Lee Arnold
1937

June 23, For the most part this region is composed of several more or less distinct habitats. First there is the open meadow land on the open flats beside the creeks. Because of the steepness of the canyons and the narrowness of the canyon bottoms, however, these are not extensive and do not seem to have very many typical mammals. Where these meadows are sprinkled with Artemisia tridentata and fallen logs Leguras have been found in fair numbers. These seem to build their nests under the fallen logs and forage among the sage. A second typical habitat is to be found along the streams which are found at this time of the year in almost every canyon. These streams are bordered with aspens and low herbaceous plants. The mammal life along here seems to be characterized by the presence of Microtus mordax and Sorex palustris. The Microtus at places having more or less indistinct runs along the overhanging banks and logs while the Sorex seem to range along the open shoreline in quest of what food may

Lee Arnold
1937

June 23, plants which are accompanied by the presence of gophers which forage under the snow in winter and underground in the summer. I also saw signs of Neotoma (?) and Peromyscus among the rats at trapping in this habitat. Another habitat which seems to deserve a place of its own is the high sagebrush covered slopes among the pines. These are covered with fairly dense growths of sage and are probably frequented by Lepus, although I have no proof. At this point I should like to mention that although each of these habitats are distinct in places they have a tendency to overlap in places and become indistinguishable. For example in many places along the lower creek can be found limber pine. This has without a doubt been washed down by the stream to a place where it has taken root far below its usual zone. Another point which I would like to bring out is that in spite of logging and fire the zones of high timber have been broken up and in many places offered an opportunity for

Hendry Creek, 900ft, 1 1/2 mi. E. H. T. Thorsby, White Pine Co., Nevada

Lee Arnold
1937

June 23, aspen and other plants to get a start.
I might also add at this point that the presence of rocky outcroppings and telus slopes offer another habitat. In this I have only found signs of Porcupine, Neotoma and Peromyscus.
The birds seen in this area have been:

Juncos — several nests seen
R.s. Flickers — nest hole sighted

Western Tanager

Black-chinned Hummingbird

White-throated Swift

Violet-green Swallow

Tree swallow

Hairy Woodpecker

Downy Woodpecker

Olive-backed Thrush (sp.?)

Western Robin

Spotted Towhee

Lawrence Goldfinch

Henry Creek, 9,100 ft., 1 1/2 mi. E Mt. Norich, White Pine Co., Nevada.

Lee Arnold
1937

No reptiles or amphibians have been seen by me although Fitch collected a Garter Snake.

Mammals:

Sorex palustris

Bat (sp?)

Marmota flaviventris

Callospermophilus chrysodeirus

Eutamias quadricinctatus

Thomomys bottae

Peromyscus maniculatus

Neotoma lepida

Lepus curtatus

Erethizon (sign seen)

Sylvilagus nuttallii

Odocoileus hemionus

Microtus mordax

Lu Arnold
1937

Itinerary

Hendry Creek, 6,100 ft. 4½ mi. SE Mt. Moriah,
White Pine Co., Nevada

June 23, Yesterday afternoon we left our camp farther up Hendry Creek and packed about seven miles downstream to our present camp site on the spot where the boundary of the Nevada National Forest crosses Hendry Creek. We are camped beneath a large yellow pine tree. This tree is the lowest in elevation of its kind in this vicinity. The flat of the canyon is about 150 yds. wide at this point and the lowland is covered with sage and other low bushes while near the creek is found dense thickets of willow and western birch trees. Last night I set out 70 mouse traps along the side of the hill south of camp. For the most part they were set in low brush with broken, flaky rocks forming the surface. While setting the traps I stepped upon a mound which had been undermined by kangaroo rats. As I caved in the roof a large Dipodomys microps ran from a nearby entrance. In spite of my attempt to catch the animal it reached a nearby hole. In my traps I caught:

5 Neotoma lepida 4 imm ♀
1 imm ♂

Arnold, Lee

1937

Species Accounts
Mammals

(arranged after Miller Check-list, 1923)

Lee Amadell
1937

Sorex palustris

Hendry Creek, 9,100ft., 1½ mi. E TTT.

Thorich, White Pine Co., Nevada.

- June 20, Adult, breeding ♂ caught within 3 inches of the water on the gravel edge of the creek. Apparently the shrew jumped on the trap rather than attempting to eat the bacon or rolled oats.
- June 21, Adult breeding ♂ caught along creek about 50 feet north of the one on June 20.
- June 22, Adult ♀ caught about a foot from the creek where she apparently jumped from a low log onto the trap.

Lee Arnold
1937

Myotis (sp?)

Warm Springs, 4,000 ft., 9 mi. E Amedee, Lassen Co., Calif.

May 27, Single adult ♀ shot over alfalfa field - others seen - probably Myotis.

Mouth of Smith Creek Canyon, 5,400 ft., Mt. Moriah, White Pine Co., Nevada

June 10, Two, one adult ♀ and one adult ♂ shot over open space next to creek at mouth of canyon. Most of the bats seen were flying down the canyon and out onto the desert. I imagine that they roost in the large caves in the side walls of the canyon and forage over the vast, open desert. For several nights we have observed them flying eastward past our camp in the canyon.

2 mi. W Smith Creek Cave, 6,300 ft., Mt. Moriah, White Pine Co., Nevada

June 11, I shot one ♀ flying about the tops of the willows around our camp.

June 12, Shot single ♀ over camp. Weather colder than night before. There did not seem to be as many bats flying about.

June 13, Two adult ♀ shot.

June 14, Four Myotis (sp?) and one Myotis evotis shot flying over and among the willow trees about camp. All of these were ♀ bats. The Myotis evotis and one of the Myotis (sp?) had well developed single embryos.

Lee Arnold
1937

T1740tis (sp.?)

2 mi W Smith Creek Cave, 6,300 ft., T17.

Moriah, White Pine Co., Nevada.

June 15, Five adult ♀ shot. Three of these had well developed single embryos. Could it be that the males do not come out until later or that they are in a different locality.

Probably the presence of water and an abundant growth of willows is attractive to the insects that the bats feed upon — thus the presence of vast numbers of bats. It certainly seems an ideal spot for flies, gnats and mosquitos.

Lee Arnold
1937

Myotis evotis

2 mi. W Smith Creek Cave, 6,300ft., Mt.
Horizh, White Pine Co., Nevada.

June 14, A single adult ♀ with one embryo shot
among the willows about camp. This bat seemed
to be flying lower in the trees and with
a more swooping darting flight than
the ^{other} Myotis. I am going to try and shoot
some of the other bats that fly in that
manner tonight and see if there is anything
to my hypothesis.

Lee Arnold
1937

Spilogale phenax

1/2 mi. W Smith Creek Cave, 6,000 ft.,

117 ft. 11700 ft., White Pine Co., Nevada

June 17,

In a #1 steel jump trap set for squirrels under an overhanging rock, I caught this immature male. Although the trap was baited with rolled oats I do not know whether or not he was in quest of the bait when he was caught. The exact spot where it was caught was on the west side of a rocky gully (small canyon) which was on the south side of Smith Creek Canyon.

The principle vegetation consisted of Piñon and Juniper. It is interesting to note that a trap set about 20 feet below this one caught a porcupine the same night but because of it not having a strong enough grip on the animal it got away. The reason for my conclusion was the fact that the trap had long porcupine guard hairs and short quills in it. I am setting in the same habitat again tonight in hopes of catching another Spilogale or a Porcupine.

Lee Arnold
1937

Lynx rufus

4 mi. S Sandy, 5,000 ft., Millard Co., Utah

June 6, Skull of Lynx r. found in sand dunes.

The animal had apparently been dead for some time inasmuch as the remains of the animal were bleached and scattered far and wide.

Lee Arnold
1937

Citellus mollis

1/2 Mi. S Colneva, Lassen Co., Calif.

May 24, Single imm ♀ collected by me. This was merely a representative of many others in this locality. When we would get out of the car they would whistle at us more or less like a bird.

May 27, Warm Spring, 4000 ft., 9 mi. E Hmedee, Lassen Co., Calif.
Single ♀ caught in early morning in mouse trap. There are thousands of this species— young and old in this area. This is undoubtedly the reason for the vast numbers of hawks. The other day I noted one in a bush. It appeared to be eating berries (seeds) or leaves — I could not distinguish which.

Lee Arnold

1937

Ammospermophilus leucurus

Mouth of Fox Canyon, 4,250 ft., 7½ mi. S

Pahrump Pk., Washoe Co., Nevada.

June 4, Adult ♀ shot at edge of wash. north of Pyramid Lake. It was sitting in the top branches of a bush watching me as I approached. When I shot it fell to the ground. I saw what I thought to be it run down a hole at the base of the bush. Upon running to the bush I saw still another form run down the hole. These were evidently young of the one I shot for the adult ♀ with enlarged mammary glands lay dead on the ground.

June 5, Adult ♀ shot 1 mile W Smith Creek Cave,
6,000 ft., T.H. Thorich, White Pine Co., Nev.

It was sitting upon a large boulder at the crest of a hill — watching my actions. The ground was coarse and rocky while the shrubbery was sparse — mostly artemisia tridentata and "hunchgrass" with scattered cactus.

June 7 An adult ♂ shot within 50 feet of spot where ♀ was shot on June 5, 1937. These two seem to be the only ones living this far from the mouth of the canyon.

Henry Creek, mi. S Gandy, 5,000 ft.,
Millard Co., Utah

June 13, ~~Three~~^{Four} were shot (1 Adult ♂; 1 Ad. ♀ and 2

Lee Arnold
1937

Ammospermophilus leucurus

Henry Creek, mi. S Gandy, Millard Co.,
Utah.

June 13 imm. ♀ in back of Mr. Parker's house. These were in the act of raiding his grain store. According to Mr. Parker, the ranchman, they were constantly making trips back and forth from their holes under the corral fence to the grain house. Those shot had their cheek pockets distended with oats. Although there was a large sack of poisoned barley in the storehouse the Ammos. would not seem to touch it. Because of this the rancher was quite baffled as to how to control the squirrels. I tried to help him by telling him various means of control. The squirrels were quite tame. They would allow me to approach within several feet of them. At one time I sat and watched them from a vantage point near the main route from corral to feed house. They would approach cautiously — watching me all of the time until about halfway between the two places. Then they would run rapidly the remaining distance as if they knew that it would be foolish to attempt to retrace their steps after venturing as far as they had.

Lee Arnold
1937

Eutamias quadrivittatus

Hendry Creek, 8,000 ft., 2½ mi E Mt.
Morich, White Pine Co., Nevada.

June 21, 1937

Male chipmunk was shot on an overgrown talus slope about two miles south of camp. The animal was not frightened by my approach and sat for several moments watching my movements. There seem to be several others in this immediate vicinity. The habitat consisted of deer brush, yellow pine and rocks for the most part.

Lee Arnold
1937

Eutamias dorsalis

June 13 2 mi. W Smith Creek Cave, 6,300 ft., Mt. Thorich,
White Pine Co., Nevada

I caught an adult nursing ♀ in a mousetrap set among the large boulders on the side of the canyon north of camp. Except for scattered sagebrush and Juniper trees the nearest thick brush was rose. This thicket was about 50 feet from the trap. The mammal had apparently been caught early in the day and some snake had attempted to swallow it after it was caught. The entire anterior portion of the chipmunk was covered with saliva and a deep hole was cut into its side just in front of where the wire of the trap held it.

June 16, 1 mi. W Smith Creek Cave, 6,000 ft., Mt. Thorich,
White Pine Co., Nevada.

This morning at 10 o'clock I shot an adult ♀. This animal was watching me as I walked along a path but the moment I raised my gun it ran up the hill and behind a rock. In a moment it appeared above the rock. The country at this point was flatter and closer to the creek bottom than that where the *Eutamias* was caught on June 13.

Lee Arnold
1937

Eutamias minimus

Warm Spring, Lassen Co., Calif.

May 23 Four specimens (2 imm ♂ + 2 adult males)
captured. about $\frac{1}{3}$ mile east of the spring just
south of the junction of the road going to
Flannigan. The ground around where they
were caught was hard packed with bushes
about 12 ft. apart. Evidently there is a small
colony of these animals here. No others
have been caught in similar habitats elsewhere
near here.

Lee Arnold
1937

Thomomys bottae

1 1/2 mi. W Smith Creek Cave, 6,000ft,

Mt. Moriah, White Pine Co., Nevada

June 6, Adult ♀ caught on flat area at south bank of creek. The ground where caught was harsh with many small (walnut sized) jagged rocks. The trap was set at the base of a prickly pear cactus — This ^{roots of which} were apparently what the mammal was eating. Only the skeleton of this specimen was saved. Last night Johnson and I set traps (9 sets) on a farm (alfalfa) 1 mi SW Gandy, 5,000ft,
Millard Co., Utah. The traps were set around the edge of a large alfalfa field. According to the farmer he had never trapped or poisoned the gophers around his farm. Consequently the place was over-run by gophers. It seems that gophers inhabit all of the areas in this region where creeks flow out on the desert to form a marsh or semi-marshland. These gophers are in this case the same type that are found farther up the canyons (i.e. Smith). We caught 5 ♀ and one imm ♂.

June 16 Two adult ♂ caught 1 mi. W Smith Creek Cave,
6,000ft, Mt. Moriah, White Pine Co., Nevada

These were in the same type of habitat as the ♀ of June 3 — (Smith Creek). In both cases cactus seemed to be part of the diet. In one hole I found particles of grass while in

Lee Arnold
1937

Thomomys bottae

1 mi. W Smith Creek Cave, 6,000ft., T17t. T17vish,
White Pine Co., Nevada.

June 16, the other I found particles of a green shrub
(probably saltbrush)

Hendry Creek 9,100ft., 1 1/2 mi. E Mt. T17vish,
White Pine Co., Nevada

June 21, A single, adult, breeding male was
caught in the meadow several feet from
camp. It was apparently feeding
on the low green grass growing in the
meadow.

Lee Arnold

1937

Thomomys Quadratus

Horse Canyon 5,800 ft, Tehrum T.R., Washoe
Co., Nevada.

May 29 I caught 2 ♀ T.q. in a small open space just south of camp. The spot was surrounded with rose bushes and there was short "punch grass" growing here and there on the ground. The soil was fine, moist and dark but was full of small rocks. These ranged from the size of a pea to that of a walnut. This seemed to make digging difficult—consequently the holes were very small.

May 30 Caught 2 more near the same spot as that of the 29th — one ♀ and one ♂. These two were larger than the first. One feature of the habitat was the fact that the burrows were located in a place where constant seepage kept the soil very moist at this time of the year. "Snowplugs" from the preceding winter could be seen here and there.

Arnold Perognathus fermosus
1937

Warm Spring, Lassen Co., Calif.

May 26 Two caught by Fitch in rocky locations N.W. of here.

May 30 1 mi. NW Behrman Pk., Washoe Co., Nevada: A single ♀ was caught by me in the hard packed scantily brushed area on the E side of Snake Creek Desert. It seemed to prefer more rocky, rough ground than the other Perognathus thus far caught. The desert at this point was strewn with black volcanic rock. These ranged from the size of a pea to that of a cantalope.

Lee Arnold
1937

Perognathus longimembris

Warm Spring, Lassen Co., Calif.

May 27 One specimen caught $\frac{1}{4}$ mile east of spring. Captured in same type of country Thiodipodops was found in. This is the first recorded on this trip. Habitat - sandy, loose loam with salt bush about 10 ft. apart (av.).

4 mi. NW Pahrump Pk., Washoe Co., Nevada

May 30 6 caught - 3 ♂ + 3 ♀. In sandy soil of east edge of smoke creek desert. The type of habitat was that in which I expected to get Microdipodops. The area was characterized by windblown sand. The night that the traps were set was very windy but it had little (seemingly) effect on the animal life. (1 ♀ - 6 emb.) (1 ♀ - 5 emb.)

Fox Canyon, 4800 ft., 4 mi S Pahrump Pk., Washoe Co., Nevada

May 31 3 caught - 2 ♂ + 1 ♀ with 6 embryos in gravel soil on side of canyon NW of camp. In each of the spots where these were caught, however, fine silty dust was near at hand. This area was not nearly so dusty as those in which the previous mice were captured.

June 4 near Smith Creek Cave, 5800 ft., Tilt Thorich, White Pine Co., Nevada.

3 caught - all ♀'s. These were caught in silty-gravel east of camp. The bushes where these were captured consisted of

Lee Arnold
1937

Perognathus longimembris

#2.

near Smith Creek Cave, Mt. Moriah, White Pine Co., Nevada

June 4, low sage.

2 mi. E Smith Creek Cave, Mt. Moriah, White Pine Co., Nevada

June 10, One adult ♂ caught on flat desert land just south of the creek. The vegetation was scarcely over 1 foot high while the coarse, sandy soil was paved by small rocks.

Lee Arnold Perognathus parvus
1931

Warm Spring, Lassen Co., Calif.

May 25 Three of these caught 4½ HW of here in same habitat as Dipodomys merriami. Area characterized by abundant salt bush and hard baked soil.

May 27 One caught ¼ mile east of Warm Spring in baked soil with scattered salt bush.

May 29 Horse Canyon, 5,800 ft., Tehum Pk., Washoe Co., Nevada
A single ♂ was caught beneath a low bush up one of the side canyons of Horse Canyon. It was in the bottom of the canyon next to a small stream. The walls of the canyon went up steeply on both sides at about a 50 degree angle.

Lee Arnold
1937

Dipodomys merriami

Warm Spring, 9 mi. E. Hemedee, Lassen Co., Calif.

May 25 Caught 4 (2 ♂ 2 ♀) near farm house 4½ mi NE of Warm Spring. Among salt bush in sandy loam.

May 30 Caught 2 single ♂ 4 mi. W. Pahrump Pk., Washoe Co., Nevada in the sandy silt-like soil on the west edge of Snake Creek Desert. The Dipo. was in practically the same type of habitat that ordii was in. It is a problem to me as to how two such similar species of mammals could live in the same locality and practically the same ecologic niche without apparent conflict. Could it possibly be that the food is different though found in the same place.

Lee Arnold Dipodomys ordii (microps?)
1937

May 26 Warm Spring, Lassen Co., Calif

Four caught 4½ miles NW of here yesterday by me. Fitch & Johnson have both caught several in similar sandy more or less open places. They seem to inhabit areas where the brush is not as thick as that inhabited by Dipodomys merriami.

May 27 Two caught in trapline running out on the floor of the desert east of camp. They were on soft ground - siltlike. They seem to like the soft dry silty soil to roll in. Their tracks and tail marks are plainly visible in such places.

May 30 4 mi. NW Pahrump Pk., Washoe Co., Nevada:
Three caught in the scattered brushland on the eastern side of Smoke Creek Desert. The spots where they were caught were for the most part soft silt-like dusty plots

May 31 Fox Canyon, 4 mi. S Pahrump Pk., Washoe Co., Nevada.
Four caught on rolling hills just west of camp. One of these was caught at the mouth of a burrow which was situated on a low mound of bare earth. There were eight or ten burrows into this single mound about 13 ft in diameter. Three other traps set on the mound were undisturbed. The other three were caught under the edges of bushes away from holes. These were apparently foraging over the hard baked ground.

Lee Arnold
1937

#2.

Dipodomys ordii (microps?)

June 4, near Smith Creek Cave, 5,800 ft.,
Mt. Moriah, White Pine Co., Nevada

In a trapline of 100 traps set on the flat just east of camp I caught the following Dipodomys. The number of the trap, sex and association is given. In the case of the rat caught in trap #42 I am not sure that it is of the same kind as the rest — It has been prepared as a skin, however so that positive identification can be assured.

1. ♀ Sandy gravel under Artemisia tridentata
2. ♂ " " "
3. ♀ " " "
4. [15] " " " Artemisia tridentata
5. [18] " " " "
6. [22] Beside rock on loamy soil.
7. [27] Loam and rocks — no vegetation — only part of tail left in trap
8. [34] Silty soil under F.t. just on N side of creek.
9. [37] Silty gravel beside dead bush.
10. [42] Loamy gravel with larger stones — F.t.
11. [60] " " " "
12. [65] Sandy loam " "
13. [75] " " with gravel — dead bush
14. [84] " gravel " "
15. [97] " " , stones — F.t.

The sexes on these is not determined.

Lee Arnold

1937

Dipodomys ordii (& microps?)

4 mi. S Gandy, 5,000 ft., Millard Co., Utah

June 6, I caught 12 of these Dipodomys in a trapline of 95 traps set on the east side of the road in amongst the silt-like sand dunes which had blown up in irregular rows. These "Dipos" were very abundant in local colonies here and there but where the burrows were not near I did not catch many. In some regions of the sand dunes the rats would tunnel back into the wall of the dune in a more or less horizontal position. At many places in the silt I found numerous shallow holes which had evidently been dug to hide food in. In one instance I found some green pieces of greasewood buried partly in one of these burrows. I could distinguish that one of the Dipodomys was much paler than the others and had very fine pointed teeth. From the characteristics mentioned I concluded that this one was ordii while the darker ones with larger "squared off" teeth are microps.

June 7, Out of twelve traps set on the bottom land, NW Camp - near Smith Creek Cave, White Pine Co., I caught one Dipodomys microps.

June 8, 3 mi. E Smith Creek Cave, out of 42 mouse traps set on the flat low bushed

Lee Arnold Dipodomys
1937

3 mi. E Smith Creek Cave, 5,500 ft.

T.H. Morich, White Pine Co., Nevada

June 8, area east of camp I caught only 4
Dipodomys - 3 ♀ + 1 ♂. The ground was
coarse with a pavement of small pec-
sized stones.

June 9, Out of 42 mouse traps set SE of camp
on the side hill and top of the hill
I caught 3 Dipodomys microps 2 ♀ +
1 ♂. The habitat consisted of: side hill;
sparse bushes; cactus; scattered boulders
with many odd sized jagged rocks; piñon
and juniper trees scarce.

June 10, 2 mi. E Smith Creek Cave, 5,500 ft.

T.H. Morich, White Pine Co., Nevada

Out of 42 mouse traps I caught 10
Dipodomys microps. Most of these
traps were set on the dry sand of
the river bottom which was only flood-
ed during high water.

Lee Arnold
1937

Microdipodops

Warm Spring, Lassen Co., Calif.

May 26 Several caught by Johnson in sand dunes SW of here and on hillside NE. They do not seem to be around the cultivated part or hard ~~open~~ level places

May 27 One caught by myself $\frac{1}{4}$ mile east of Warm Spring. It was in an area where there was dry dusty loam with bushes (mostly salt) about every 10 feet. In almost the same location as those caught by Johnson.

May 30 None caught in my + Fitch's traplines on the eastern edge of Snake Creek Desert although we were trapping in almost (appeared to me) the same type of soil + vegetation as on the 27th.

Unwed
1937

Reithrodontomys megalotus

Warm Spring, Lassen Co., Calif.

May 26 I caught four of these in grassy area around alfalfa field.

May 27 Johnson caught ~~two~~ ^{the night before} of these in area where I trapped last

Hendry Creek, 6, 100ft, 4½ mi. SE TTH.

Morish, White Pine Co., Nevada

June 23 I caught one adult ♀ under a clump of Artemisia just where the side hill starts to raise from the canyon floor. The ground was coarse, hard and rocky.

Lee Arnold

1937

Peromyscus crinitus

near Smith Creek Cave, 6,300ft., Mt. Thorich,
White Pine Co., Nevada

June 4, Out of 100 traps set on the bottom land of Smith Creek canyon I caught only one P. crinitus. This was an adult ♀. It is interesting to compare this with the seven Peromyscus maniculatus

June 7, Out of 30 mouse traps set on the sidehill west of camp I caught 1 adult ♂ Peromyscus crinitus while out of 12 traps set on the flat directly below this spot I caught one Imm. ♀.

June 9, Out of 42 traps in the same type of habitat as that of June 7 only SE of camp on the side hill I caught 2 P. crinitus: 1 Adult ♀ and 1 Imm ♂. In this habitat the Peromyscus maniculatus and crinitus seem to be found in about equal abundance. The habitat is characterized by scattered boulders, medium sized jagged rocks, Artemisia, juniper and bunch grass.

June 11, 2 mi. W Smith Creek Cave, 6,300ft., Mt. Thorich,
White Pine Co., Nevada

Out of 45 traps set in among the boulders and ledges north of camp I caught 5 adults. The habitat was: Steep hillside; large flake-like boulders with frequent outcroppings showing the strata and offering ledges

Lee Arnold
1937

Peromyscus crinitus

2 mi. W Smith Creek Cave, 6,300 ft.
Mt. Moriah, White Pine Co., Nevada.

June 11, For the mice to run on; scattered juniper, sage, rose, etc.; many woodrat droppings. It was interesting that Fitch and Johnson caught no *Peromyscus crinitus* on the south side of the canyon although they both had long traplines set out

June 12, In the same trapline I caught four. This time they were all immatures—2 ♂ and 2 ♀. Two of these were caught in the same ~~net~~ trap. Could it be that the adults being killed off the immatures now have to hunt for themselves or is it that it was just chance that I should catch only adults the first night and only young the next.

June 13, Four caught in same trapline.

June 14, Two caught in same trapline—1 Ad. ♀ and 1 Imm. ♂.

June 16, Out of seven rat traps set 1/2 mi. W Smith Creek Cave, I had 3; one adult and two immatures. Habitat: large boulders, south side of canyon, Piñons, Junipers, coarse soil.

June 17, Out of 33 mouse traps set SE of camp on the steep North side of the canyon I had two. 1 adult ♀, 1 adult ♂.

Lee Arnold
1937

Peromyscus crinitus

2 mi. W Smith Creek Cave, 6,300 ft.,
Th. Thierick, White Pine Co., Nevada

June 17, It is interesting to note that these were
the only mammals caught in this trapline.
Habitat: Steep south facing hill; coarse soil;
scattered boulders; juniper; piñon; sage;
punch grass

- 1 Peromyscus crinitus Ad. ♀
3 Peromyscus maniculatus 2 imm. ♂
1 imm. ♀
1 Reithrodontomys megalotis Ad. ♀

Fuller record of these will be found in the species account. Yesterday afternoon on the way to camp I heard a pair of Spotted Towhees scolding in a nearby thicket. On closer examination I found a Gopher snake with its head in the nest of these birds attempting to eat the remaining two nestlings. I collected the snake but did not remove the stomach contents. I intend to return to the nest today in order to see whether or not it has been deserted. The nest was flat on the ground under a clump of overhanging grass.

Lee Arnold
1937 Peromyscus maniculatus

Warm Spring, Lassen Co., Calif.

May 25 One caught $4\frac{1}{2}$ mi. N.W. of here around deserted farm house.

May 26 18 caught at edge and near cultivated alfalfa field.

May 27 Johnson trapped in the same area that I caught the 18 Peromyscus and did not catch any. Evidently I captured most of those in this

region the first night near Smith Creek Cave, Mt. Thorich, White Pine Co., Nevada.

June 1 Nine caught — 4 ♂ — 5 ♀ in open flat east of camp

Association: Artemisia tridentata, Light-green sage like bush brighter colored leaves than A.t., Ephedra

Soil: Sandy, silty, gravel, stones etc.

Ages: 2 imm ♀ & 1 imm ♂ — all the rest adults.

June 6 4 mi. S Gandy, Utah

Four caught 2 ♂ & 2 ♀ in wind blown silt. The area in which these were caught was the type of country in which one would expect Thomomys — Low brush, loose silty sand in dunes.

June 1 near Smith Creek Cave, Mt. Thorich, White Pine Co., Nevada:

Two caught out of 30 traps on hillside to west of camp. Consisted of one adult and one Imm. ♀.

Lee Arnold
1937

Peromyscus maniculatus

Near Smith Creek Cave, T.H. Morich, White Pine Co., Nev.

June 7, On the same night I caught 3 ad. ♂ out of twelve traps on the bottom land. This gives a fair idea of the relative abundance of this animal in the two habitats.

June 8, 3 mi. E Smith Creek Cave, 5,600 ft.,
Mt. Morich, White Pine Co., Nevada.

Out of 42 mouse traps and 25 catch-
alive traps set on the flat plain
to the east of camp I only caught
one adult ♂ Peromyscus. This was on
comparatively even ground with a
"pavement" of small stones. The bushes,
consisting of sage and salt bush^(?), were
scarcely over a foot high.

June 9, near Smith Creek Cave, 5,800 ft.,
Mt. Morich, White Pine Co., Nevada.

1 ad. ♂; 1 ad. ♀; and one Imm ♂
caught out of 42 traps on hillside
sparsely brushed and for the most
part at about a 45° angle. It was
interesting to note that two Erinatus
were caught in apparently the same
type of place.

June 10, 3 ♂ and one ♀ caught
2 mi. E Smith Creek Cave, White Pine Co., Nevada.
Most of these were under bushes on the

Lee Arnold
1937

Peromyscus maniculatus

2 mi. E Smith Creek ^{Cave}, White Pine Co., Nevada

June 10, Sandy bed of Smith Creek.

3 mi. E Smith Creek Cave, White Pine Co., Nevada

June 15, In traps set along the flat beside the creek west of camp I caught 5 ♂ and 4 ♀. In this particular habitat Peromyscus and Neotoma seem to be the ones most common.

June 18, 2 mi. E Smith Creek Cave, White Pine Co., Nevada

Out of 33 traps set on the side hill NE of camp I caught 3 ~~adult~~ ♀; 1 imm. ♀; 1 adult ♂. They seem to be found in the same habitat as Crinetus at this point and in about equal numbers while in the less sloping flaky rocks to the west crinitus monopolize the scene.

Lee Arnold
1937

Neotoma lepida

near Smith Creek Cave, 5,600 ft., Mt.
Horish, White Pine Co., Nevada.

June 4 In a trapline set along the flat east of camp I caught 10 Neotoma lepida. Nearly all of these were immature — six were ♂ and four ♀. Many of them were caught where there was no sign of a nest or burrow. As I set out a line of exactly 100 traps directly down the middle of the canyon at an average of 40 ft. apart I think it would be valuable to note the exact trap each of the rats was caught in, the relative age, the sex and a general idea of the habitat where the trap was placed.

1. [19]; ♀; Imm; Under overhanging rock
2. [20]; ♀; Imm; Beside pile of debris next to creek — Sand, gravel and small rocks.
3. [21]; ♂; Imm; Beside rock (5'x4'x2'), next to prickly pear cactus.
4. [42]; ♀; Imm; Open space 10 yds. west of nest.
5. [43]; ♀; Imm; Under Artemisia, ten feet south of rocks with a suggestion of nest.
6. [46]; ♂; Adult; This animal was still alive. It had dragged the trap 10 feet. It was near a particle nest.
7. [57]; ♂; Imm; About 100 yards east of #46.
8. [81]; ♂; Imm; Found eight yards south of

Lee Arnold
1937

Neotoma lepida

near Smith Creek Cave, 5,600 ft., TTT. Moriah,
White Pine Co., Nevada

June 4, where caught and still alive in trap.
This mammal had a large Bot fly (?) larva
on its shoulder

9. [93]; ♂; Imm.; Under sage brush - 10 yards
from creek.
10. [96]; ♂; Imm.; Sandy loam and rocks with
scattered sage.

The above list gives some idea of the
"wide ranging" of this species. It will
be noted that there were nine immature
rats caught to one adult. The adult
was caught the closest to any sign of a
nest of any of them.

June 7 Out of 30 mouse traps set on the side
hill west of camp I caught two Neotoma:
1 adult ♂ and one imm ♂. The habitat
consisted of scattered boulders, numerous
small rocks, scattered sage and juniper.
It is interesting to note that the
same night twelve traps on the flat
directly below this spot yielded ~~not~~ no
Neotoma.

June 9 Out of 42 traps set in the same
habitat as June 7 only on the hill SE
of camp I caught 3 Neotoma lepida:
1 Adult ♀ and 2 imm. ♂. The ♀ adults in

La Amald
1937

Neotoma lepida

✓ near Smith Creek Cave, 5,600 ft., 111 ft.
Florich, White Pine Co., Nevada

June 9, the catches on the hillsides among the rocks seems to be much higher than on the lowland flat.

June 10, 2 mi. E Smith Creek Cave, 5,900 ft.,
111 ft. Florich, White Pine Co., Nevada

Out of 42 traps set for the most part along the creek bed of Smith Creek I caught 2 ♂ Neotoma lepida. These two were on the dry sand of the portion of the creek bed which is flooded only during very high water. It seems to me that this species makes use of the piled "drift wood," washed down during high waters, as a likely spot to build nests.

June 11, In the large flake-like boulders North of our camp 2 mi. W Smith Creek Cave, White Pine Co., Nevada (6,300 ft.)

I caught 4 Neotoma lepida in a trapline of 45 mixed mouse & rat traps. These rats and Peromyscus crinitus seem to monopolize this habitat. I left the traps in place today in order that I could see if any Eutamias were around during the day.

Lee Arnold
1937

Neotoma lepida

2 mi. W Smith Creek Cave, 6,300 ft., TTT Monah,
White Pine Co., Nevada

June 12, Last night I caught 6 Neotoma lepida
in the same trapline as on June 10.

They consisted of 1 Adult ♂; 3 Imm ♂; 2
Imm. ♀. It was interesting to find that
a greater % of Neotoma than Peromyscus
was caught on the second night while
Peromyscus were the dominating factor
on the 1st night.

June 13, Caught 2 Neotoma lepida in same trapline
as June 12

June 14, Also 2 Neotoma lepida in same trapline.

Due to the changing of camps etc. I have
been unable to spend as much time as
usual on this trapline. The rats consisted
of one adult ♂ and one imm ♂.

June 15, In a trapline of 40 traps set on
the flat land beside the creek about
1 mile west of camp I caught 1 adult ♀
and 1 Imm. ♀. These rats do not seem
to be as common here as on the side
hills and on the flatland closer to
Smith Creek Cave.

June 16, In 7 rat traps set up a gulch $\frac{1}{2}$ mi.
W Smith Creek Cave, White Pine Co., Nevada
I caught one Imm. Neotoma lepida. There
was much evidence of Neotoma in the
region.

Lee Arnold
1937

Neotoma lepida

1/2 mi. W Smith Creek Cave, 6,000 ft.,

Th. Morich, White Pine Co., Nevada

June 17, Out of seven rat traps and five steel traps set for squirrels in a gulch running south from Smith Creek Canyon I caught 1 adult ♂ Neotoma and 1 Imm. ♀. There was much sign among the rocks, i.e. feces, cut vegetation, urine etc.

Hendry Creek, 6,100 ft., 9 1/2 mi. SE Th. Morich,

White Pine Co., Nevada

June 23, Out of 70 mouse traps set on a rocky side hill, SW of camp I caught five: 4 immature ♀ and 1 immature ♂. These were on a shale-like rocky slope with scattered sage and other brush. I caught none on the same evening in traps set on the flat.

Lee Arnold
1937

Neotoma cinerea

Horse Canyon, 5,800ft., Toiyah Pk., Washoe Co., Nevada

May 28, While going through the mines on the north wall of the canyon in search of bats I found several nests of this species. In every case they were at the far end of the mine. They were located on a ledge or on the ground. The tops of the nests were open and in superficial appearance the nests appeared to be much like that of a jay. There was numerous sign of recent habitation of rats in the form of — soil moist from urine, feces, fresh clippings of various shrubs. Two of the species of shrubs I am taking in to have identified. It seems that the rats use these nests to sleep in both day and night (when not active). When they hear someone approaching they probably squeeze back into one of the many fissures in the rock and hide until the coast is clear. Otherwise I would have encountered some of them along the mine tunnel or in the nests. In every case where nests were found there were also such fissures where they could squeeze. In several of these fresh droppings and cuttings were found. One of the miners gave me an adult ♀ which had died in the mine where they were working. I saved the skull of this specimen.

Lee Arnold
1937

#2.

Neotoma cinerea

Horse Canyon, 5,800 ft., Pahrump Pk., Washoe Co., Nevada.

May 29 Last night I set several traps (6) the mine which seemed to be the most used. I was surprised to catch only one almost adult ♂. The four other traps set at the end of the mine were untouched. Could it be that this single rat was responsible for all the clippings and the three nests found nearby. Or could it be that the others, seeing the fate of this one, became more wary and were content to eat what food they themselves had gathered. In one mine where the bottom was full of water there was evidence of the rats having traveled along the narrow ledges of protruding rock on the sides of the cave.

Lee Arnold
1937

Microtus mordax

Hendry Creek, 9,100 ft., 1½ mi E T.H. Horn,
White Pine Co., Nevada

June 20, One adult ♂ caught out of 50 traps set aside and near the creek. This one was caught a few inches from the edge of the water under an overhanging ledge of moist soil. It was apparently in breeding condition.

June 21, One immature ♂ caught about 3 feet from the creek under the edge of a log. The previous night a Peromyscus maniculatus was caught in the same place.

Horse Canyon, 5,800 ft., Pahrump Pk.,
Washoe Co., Nevada

May 29 An adult ♀ was caught about 5 feet from the creek up a straight bank. It had a runway under a log from one locality where there was dense rose bush to another. Although a trap was kept at the same place for 4 nights no other Microtus were caught.

Lee Arnold
1937

Sylvilagus nuttallii

May 26 Warm Spring, 4,000ft., 9mi. E Amecoe Lassen
Co., Calif.

Shot an adult ♀ as it ran out of Alfalfa patch just south of camp. When frightened it ran over a mouse trap set by the fence — springing it. Cottontails are abundant around here. As with Jack Rabbits their skulls are found beneath almost every fence post where hawks have perched to eat them.

June 13, Henry Creek, mi. S Gandy, 5,000ft., Millard Co.,
Nevada

Shot an immature cottontail in sagebrush behind the farm house. They are common in this district although not as much in evidence as the Jackrabbits.

Lee Arnold
1937

Antilocapra americana

1 mi E Smith Creek Cave, 5,600 ft,
Th. Morish, White Pine Co., Nevada

June 2,

Just as we were entering Smith Creek Canyon Johnson saw an Antelope run in front of the car and up over a knoll to the north. By the time we got out of the car and to the top of the knoll it was several hundred yards away. It stood and eyed us for a while and then started walking away slowly. The white of the rump-patch was plainly visible most of the time.

Arnold, L.

Ecological Study of "Primitive Area"
Strawberry Canyon, Berkeley, Alameda Co., Calif.
1937

This Book is Property of
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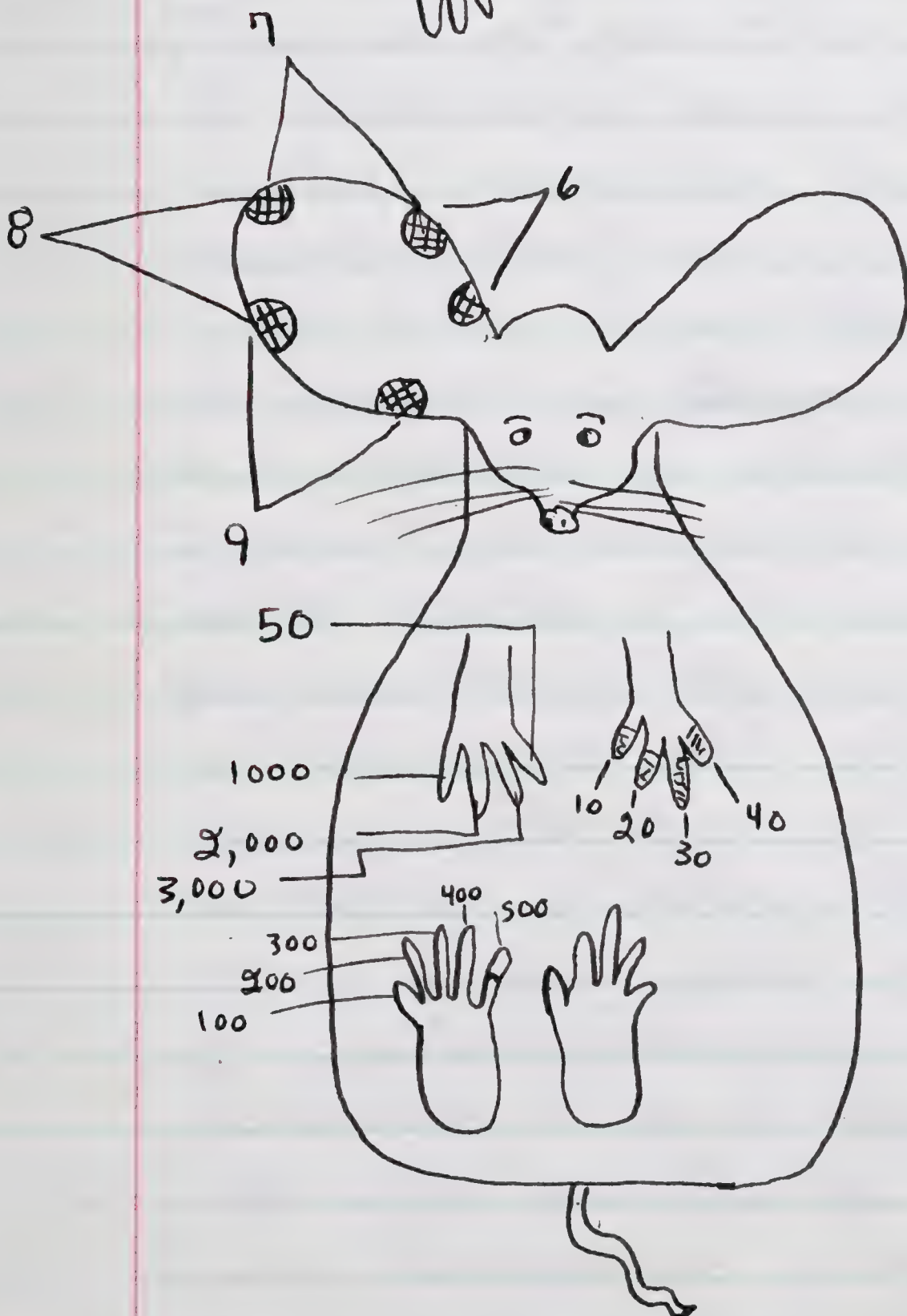
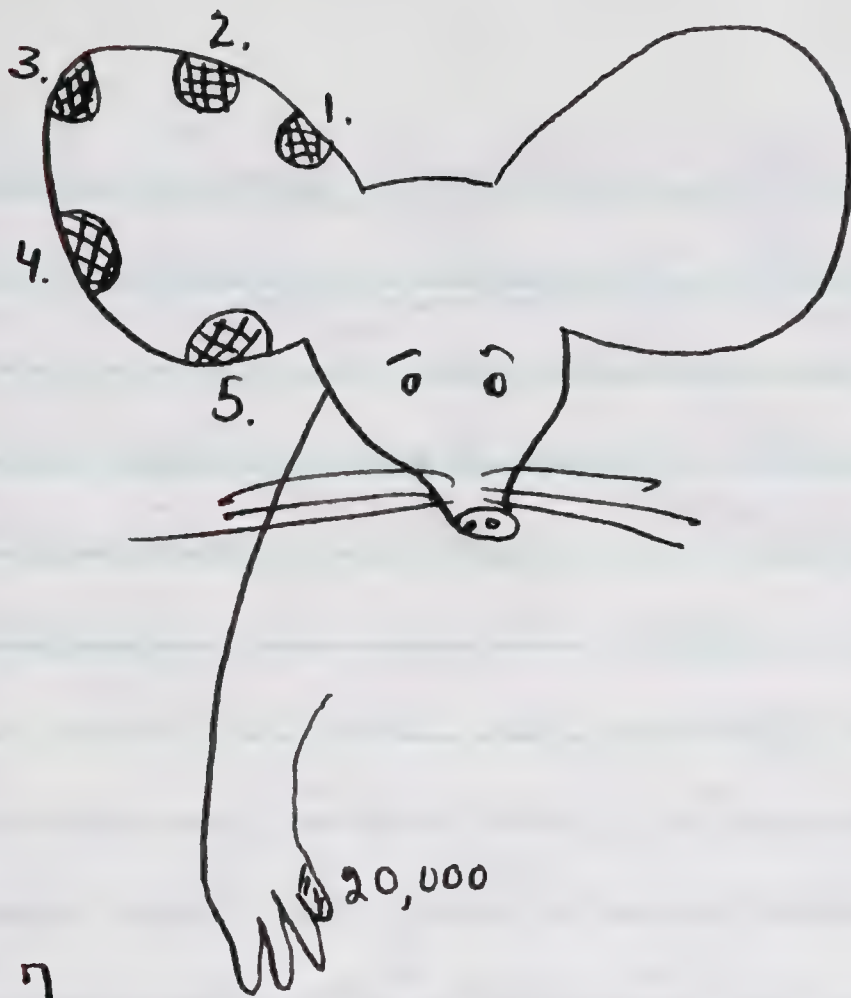
University of California

Berkeley, California

If lost please return to the above
as the notes contained herein are
quite valuable as research material.

Ecological study of the "primitive area" in Strawberry Canyon, Berkeley, with emphasis on conservation phases.

Marking Technique



Amold
1957

Oct. 1,

C.C.C. Camp, North of Botanical Garden,
Strawberry Canyon, Berkeley, Alameda
Co., Calif. I am sitting on the porch of
the office building of the C.C.C. Camp in
Strawberry Canyon. It has been raining
steadily for quite some time (3 hrs.).
In front of me is a group of Calif. Quail
foraging (23 in no.). They are mostly ♀ or
birds not in full male adult plumage.
There are not more than five full adult
♂ in the group. There is no clearly defined
sentinel among them. They forage for several
minutes without any of the ♂ birds or ♀
birds taking it upon themselves to watch
for enemies. On two occasions, however,
males mounted an elevated walk—
approx. $1\frac{1}{2}$ ft. above the ground and
looked about as if for enemies. They
are heedless of the rain and dampness
of the ground and although there are
several oaks they could be under are
unmindful of them. At one time I
saw a ♀ bird carry off an acorn.
I could not follow her as she went
behind one of the buildings—however.
Other birds, including Brown Towhees &
Spotted Towhees are also foraging in
the immediate vicinity of the quail.

Arnold
1937

Oct. 1, 1937 CCC Camp, Strawberry Canyon, Berkeley.
A ♀ Red-shafted Flicker just lit on the top of a telephone pole to my right. It is seemingly unmindful of the steady, heavy, rain. Another flicker just flew over from a group of Pinus radiata - the 1st bird flying up and following it. The quail are foraging in front of me once more. They at no time have been more than 20 feet from cover. To the right are several (approx. 15 Juncos foraging in the rain) in a loose flock. Now they are "regleaning" the ground that the quail were at one time settled upon with apparent success. It would be interesting to see just how many birds obtain nourishment from one small plot of ground during a season. It is raining steadier & harder than ever at present. Now a group of the quail are huddled under the cover of a broad leaved cultivated plant near where they were foraging. There are two ♂ & 4 ♀ visible. They are very quiet, only occasionally fluffing up their feathers and settling them down again. A pair of field glasses (as I am having sent next week) would be of great help in determining whether the male birds are any more aware of impending danger

4.1.1937

CCC Camp, Strawberry Canyon, Berkeley, Calif.
than the ♀'s. From here it seems that the ♂ birds are not as "huddled" down as the ♀ and look about them more. This is probably due to the coloring of the head of the ♂ that tends to make them more conspicuous, however.

M.V.Z., Berkeley, Alameda Co., California

Because of the steady rain in the Primitive Area all morning from 8-12 I merely jotted down notes in a small notebook and am now compiling them in this one. I contacted one of the landscape gardeners at the botanical garden and found out the "dope" that I wanted to know about. He claims that Mr. Brydon is the one in charge of the garden and is the one that I should see if I want to get working space in one of the offices. Mr. Brydon is there on week days from 8-4:30. I was also told that if I worked it right I could undoubtedly obtain space in a small office in the garden. The gardener even showed me the office. It seems that it has been used in the past merely as a reserve room. It is a very nice place. — Painted white on the inside; has a telephone (for use by

Arnold M.V.Z. Berkeley, Calif.
1937

Oct. 1, 1937 the WPA.; is convenient to the Primitive Area and has a large table on which to do map work and the like. The room also had a stove in it to use on cold days. This is really an ideal set-up compared to the big, dark-colored drafty rooms of the CCC camp. I also obtained more information regarding keys and locks. It seems that the key that I received from Dr. Grinnell is the key into the botanical garden rather than the primitive area. This key was numbered 2007. I was also told that Key #224 should be obtained if I was to use all of the botanical garden gates. As far as getting into the Prim. Area goes there is only one gate with a lock on it. This gate is at the corner of the fence nearest the water tank and main office. This gate was locked by a cheap lock bearing the number 61 on one side. It was a "Master" brand lock. All the other gates are lockless. In the same corner of the area as the one (gate) just mentioned is a large double sized gate entering the area from the enclosure where the water tank is. This gate was about two feet ajar so that most any

Arnold
1957

M.V.Z. Berkeley, California

Oct. 1, 1957 animal or human could get through it. The brush, however, had grown up so much that it is doubtful that any larger animals would get through. Besides, it opened into an area which was in itself fenced. At this point I do not believe that the map of ^{the} Strawberry Canyon project agrees with the actual fence line. I believe that the fence going northward heads off from the NW-SE fence at about the 900 ft. contour line. I have not checked this definitely, however, as yet. I think it would be a good idea to find if this map is correct as to the exact place of the fence from someone in the near future. After talking to the landscape gardener for quite some time I proceeded over into the area. I noticed that the W area of the fence just east of the tobacco field and just north of Strawberry Creek has been partly torn down. Most of the wire is still there but in places it is torn up from the bottom and in places is broken from the top. This condition extends for about fifty feet. While in the tall weeds just inside of the fence I saw a large garter snake. It was approximately $2\frac{1}{2}$ feet long. I

Arnold
1937

N. V. Z. Berkeley, Calif.

Oct. 1, 1937 proceeded to the east fence of the area by way of the north bank of the canyon (creek) I followed a grown over trail for about 100 yards but shortly this trail ended. Along the trail I saw evidence of recent invasion by humans. — Namely a cigarette package and gum wrappings. If the tobacco was smoked in the same type of area that I found the cigarette package it would have certainly been inviting a brush fire. When the trail ended I climbed up the hill and made my way along the North bank as best I could. Because of the wet weather going was extremely difficult. Near the east fence I encountered a trail which had apparently been built to enable one to go through the primitive area. I followed this trail down to the bottom of the canyon, across the bridge and back down the canyon toward the west fence. In several places it was quite grown over and in other places I found evidence of humans having been through the area (this was in the form of newspapers). The trail led to the west fence at a point just south of the creek. It

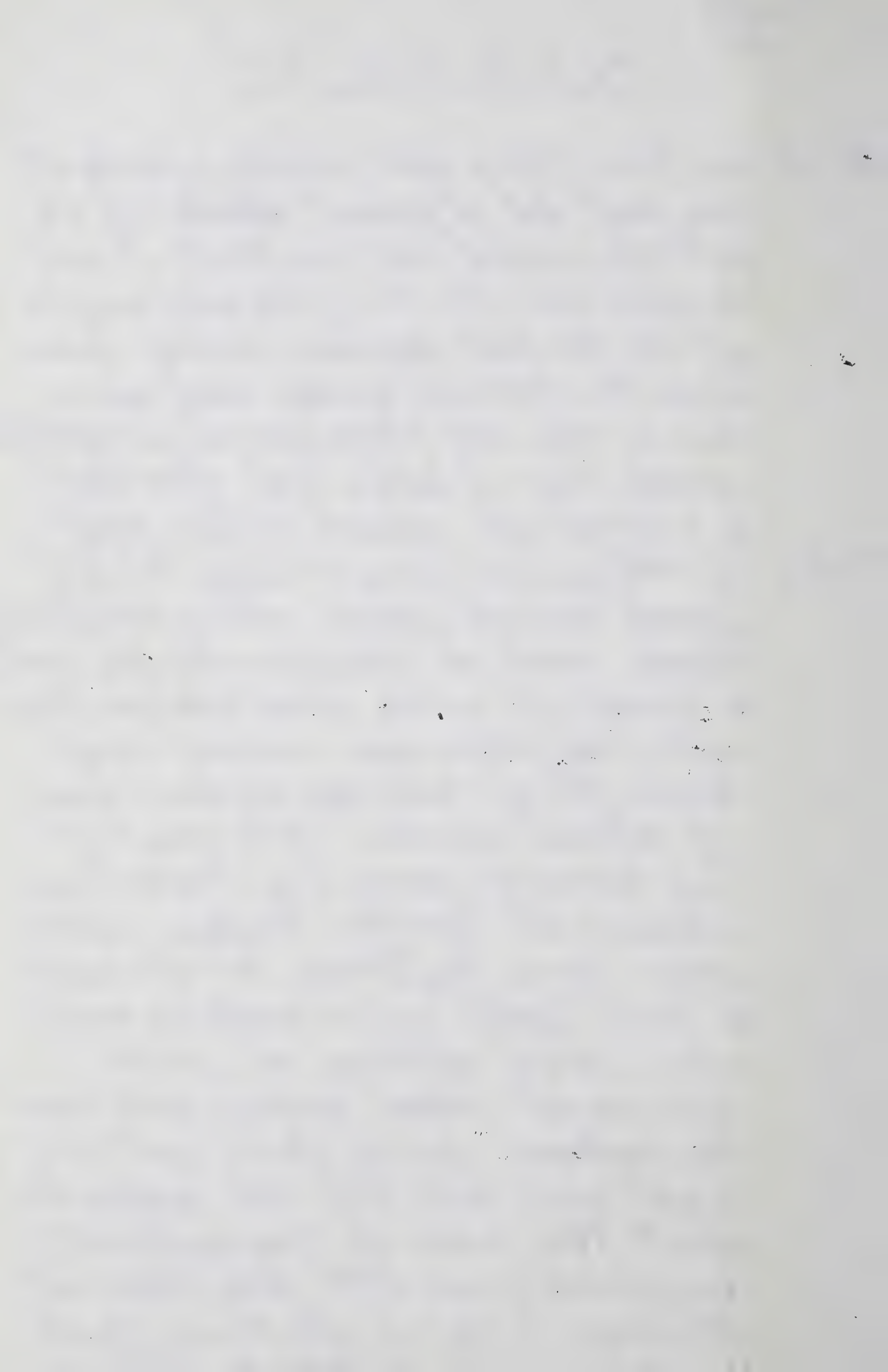
Amold
1957

M.V.Z. Berkeley, Calif.

Oct. 1, 1957 one time there was probably a gate at this point but at present ~~there~~ it is entirely wired over so that I had to climb over. As it is, the only way to get into the area besides coming down from the botanical garden and going down in the very steep "gorge" where the creek flows I believe that there should be a locked gate placed at that point.

Oct 10,

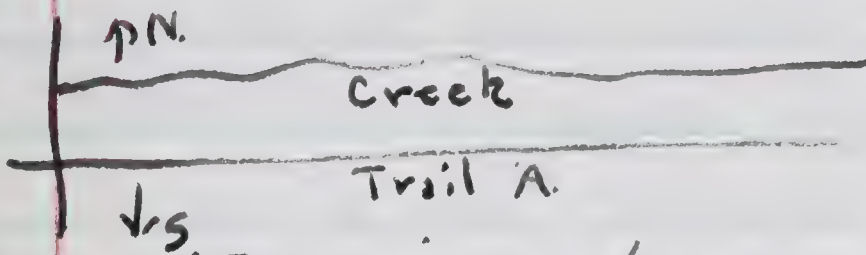
12:03 PM Primitive Area — S.C. H Calif
Ground Squirrel seen sitting on hillside 100 yds. west of fence — 100 yds. north of Creek. Is calling from high point on rocks. Two others seen running along hillside. All of these seen on bare ground of botanical garden. Birds seen: 1 Calif Jay carrying acorn; Two Steller Jays
Remains of Spotted Towhee found under large bay(?) tree 100 ft. east of trail "gate" near creek on west side. Large splotches of white excrement seen among and near the feathers. Large bird (not able to get good look at it but apparently about the size of Cooper Hawk) frightened from 2nd Bay Tree east of fence. Pile of old dung about Coyote size found 300 yds. ^{east} of



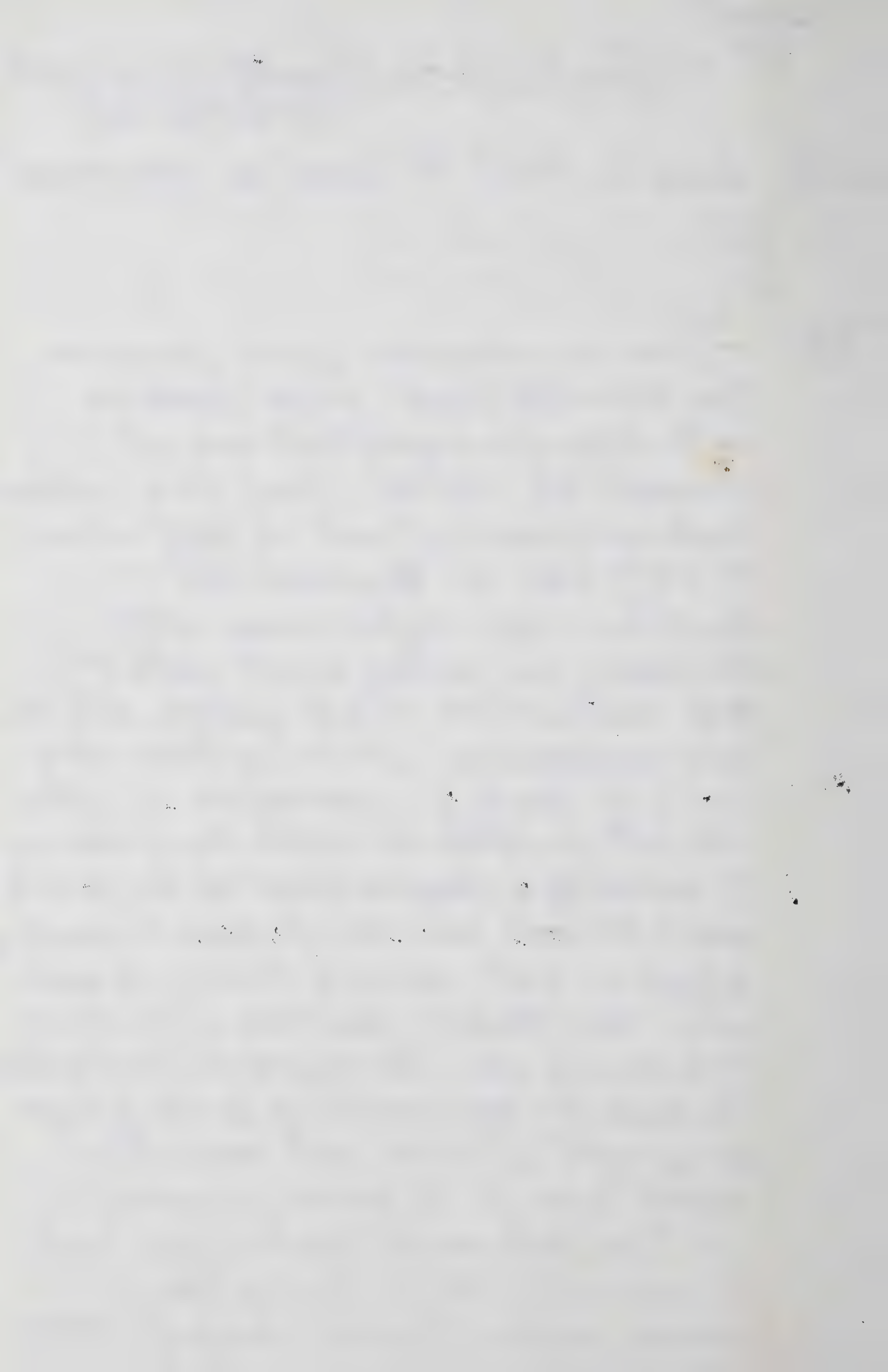
Amold
1937

Primitive Area, Strawberry Canyon
Berkeley, Calif.

Oct. 10, fence on trail "A." Saved as specimens



— Species unknown — saved for exam.
Two Wren-tits heard from brush on north slope of Canyon (South side of Monument Hill). Another heard from scattered brush and grass just west of small canyon on south side of Monument Hill. —
Vegetation and section maps very necessary for plotting exact spots of birds and features. Field glasses will be very necessary. While walking along trail I heard a commotion in willow thicket in bottom of creek. On freezing I detected a Cooper Hawk on the ground about 20 feet below me. I gave its peculiar click — call when I threw a rock into the thicket and then flew from the ground into the depth of the thicket. Perhaps it has something in its talons but as yet I have not seen. As I stand here it is making a commotion in the bottom of the thicket but I can not see it. Every time I throw rocks it goes crashing through the brush.



Arnold
1957 Primitive Area, S. Canyon, Berkeley

Oct. 10, 2 Spotted Towhees; 1 Song-sparrow seen
in thicket near hawk - 12:45

R.S. Flicker seen flying into pines
on south hill. Several woodrat nests
in among branches of pines. S. Towhees
seen several places along trail. Wren-tits
spotting hillside with song. Fl good
idea would be a small page map
for every bird - various numbers
for dates. Several pieces of dung
similar to those found on lower
trail found on upper trail 50 yds west
of pines; 100 yds. east of fence. —

Saved. —

Dung.
620

Dung
620

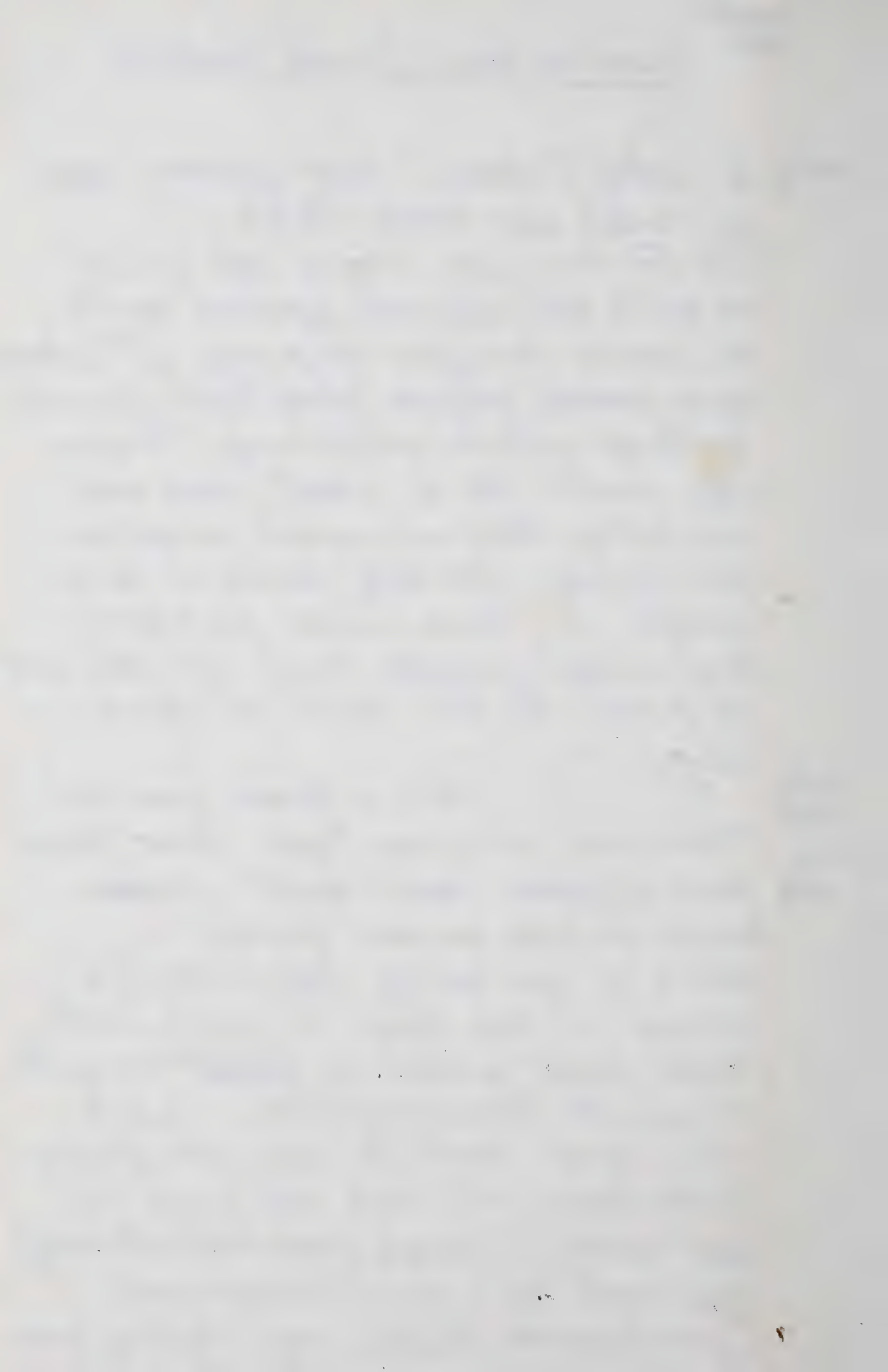
Hair & Bones observed.

More dung of same type found 50 yds.
west of above spot next to ~~fence~~
bridge of logs across gulley.

While I am eating near the SW
corner of the fence I saw a Red-
tailed hawk alight in ~~oaks~~ cypress on south
slope of Monument Hill. ^{2 w 3}

little birds about the size of Barny
Nuthatches fly into oak some 30
feet away (Although prob. not nuthatches)
Had short tails and chipping note.

Two Sparrow Hawks are circling over
Cypress trees near Red-tailed



Arnold
1957 Primitive Area, S.C., Berkeley, Calif.

Oct. 19

Hawk. The Red-tailed Hawk, however, seen, flew. As it did the S. Hawks swooped at it — constantly emitting their hilleh-hilleh notes. The Red-tail does not seem much concerned with their efforts, — This is at 1:20 P.M.

At 1:45 a Marsh Hawk flew over my head toward the west. It had apparently only flown over the area. This is a beautiful day — mild, sunny with a few clouds. I am spending most of my time brozing around the various trails and getting some idea as to the various types of associations. There is quite a bit more pine-cypress-eucalyptus asso. than I had previously expected. This will undoubtedly throw the study into one of not so primitive an area. Several species at first inspection have adapted themselves to the new habitats. An adult Cooper Hawk just flew out of the pines above me and down into the canyon. I did not see where it lit but I know it did not fly out of the bounds of the fence. At 2:15 P.M. I saw 2 Scolophorus on rocks of creek bed at east end of the area.

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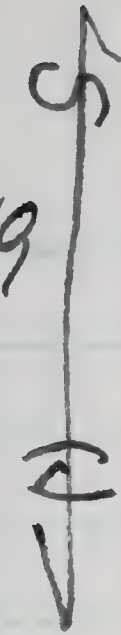
Amold
1937 Primitive Area, S.C. Berkeley, Calif.

Oct. 10,

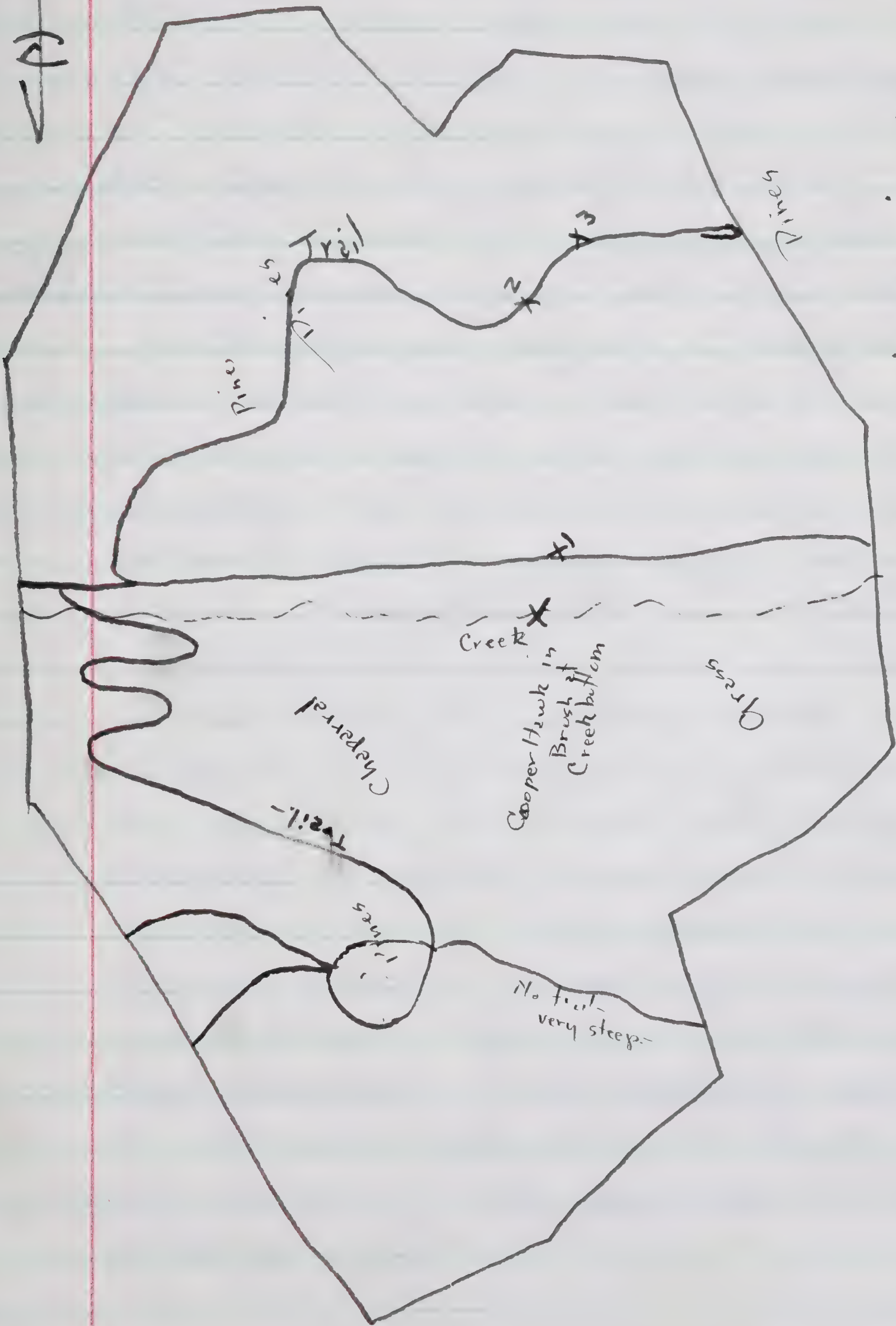
Cooper Hawk seen perched on fence post about 50 yards north of creek at east fence. It was preening its feathers when first seen. When I whistled it flew west into the area and disappeared over the hill. Spotted Towhee and wren-tit seen near creek at this spot. Flicker heard on hill to the south. Steller Jay heard west in creek bed. ~~At 2:25~~ At 2:25 I heard a Calif. Thrasher on the slope just ~~west~~ ^{south} of the creek that is covered with poison oak & prunus. I observed a large adult Neotoma about five feet from its nest going through the poison oak toward the nest. The nest is located just 30 ft. north of the large Quercus californicus about 75 yds. west of the east fence. The nest is a small one built around the base of an ~~entire~~ old oak that has had its heart burnt out. While writing this two flickers lit in the oak overhead — after flying around for several moments after each other with much edev & flapping of wings. There are two Steller Jays in the far side of the tree tapping on the branches with their bills.

Arnold 1957 - Thimble Area, S. C. Berkeley, Calif.

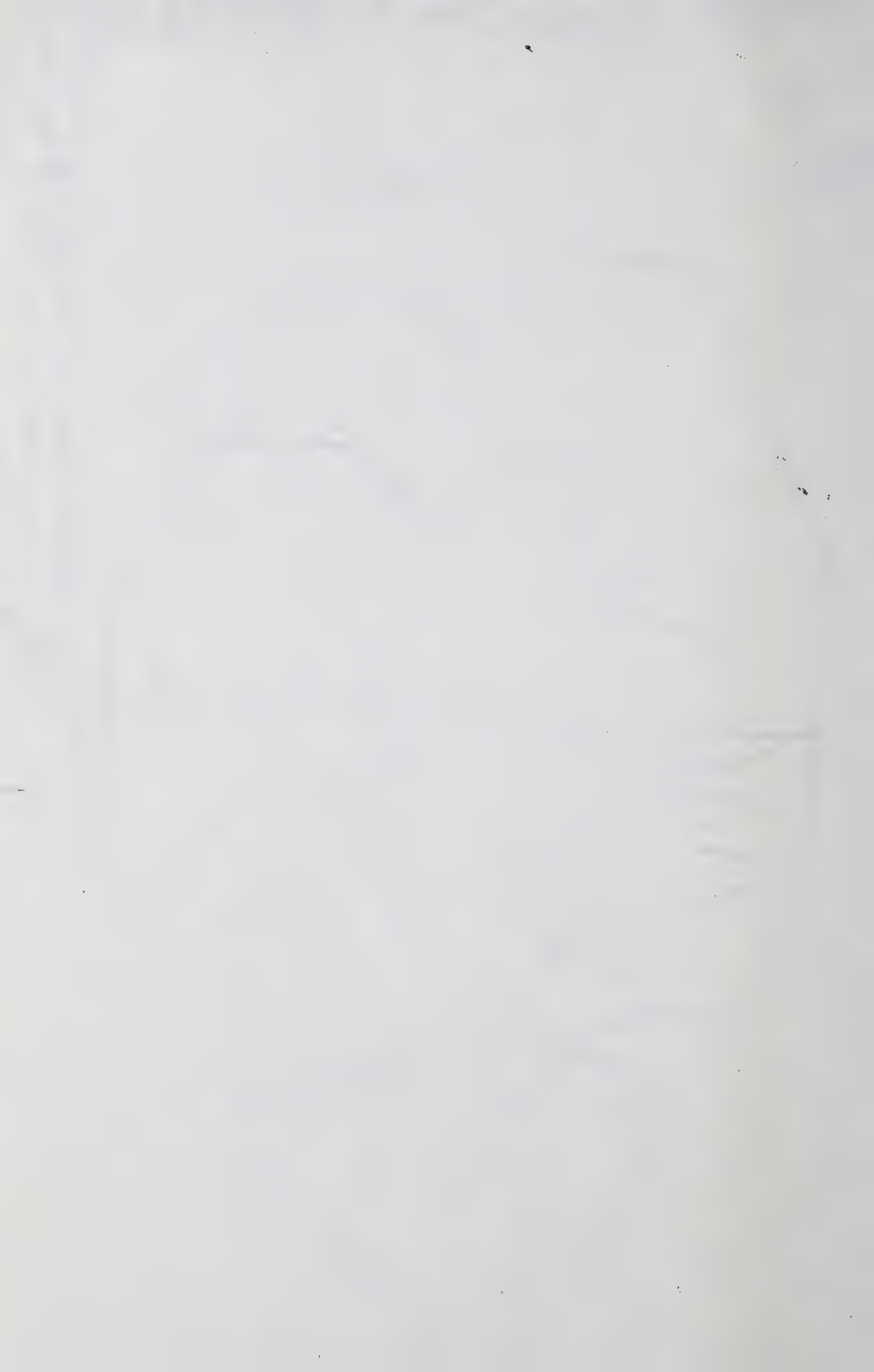
Oct. 19



1. Dung
2. Dung
3. Dung



Rough Sketch Showing the various routes taken today and a very few of the items of esso. etc.



Arnold
1937 Primitive Area, S.C., Berkeley Calif.

Oct. 10,

A vireo (Prob. Hutton) was perched in the top of the oak just above my head. 5:30 P.M. Junco seen on brushy slope just north of creek. - Much evidence of "mouse digging" on this side hill. Earth of gravelly texture - probably good for Perognathus

Dung
622

More feces found on trail in north side of canyon - preserved for "identification". Quite a bit of gopher sign and in one place some diggings that could have easily been ground squirrel was seen on the top of Monument Hill. A flock of 8 Valley Quail were seen in the corner near the double fence closest to the botanical garden.

On the whole the most interesting and probably the most significant feature today was the abundance of Cooper Hawks. From my scanty observations thus far I would say that the Cooper hawk probably nested in this area and some of those seen are young of the year (as told by plumage color)

Arnold
1937 M.V.Z., Berkeley, Calif.

Oct. 16 This morning Dr. Grinnell and ~~myself~~^I went up to the primitive area to look over the gate situation. We arrived at the Botanical Garden at about 9:50. After showing him the room we had given to us for working in, we started over toward the "Primitive Area."

At 10 A.M. we saw several (5) Gambel's Sparrows chasing and eating termites along one of the paths. These sparrows would run along and pick the insects out of the air, pick them from the ground and at one time I saw a bird fly about 18 inches off the ground and catch one of the insects in mid air "Flycatcher fashion." The birds would eat the insects - wings and all. Although a Brown Towhee was nearby on the path, I did not see it catch any termites. Dr. Grinnell said that although these are immature birds they could be told from hutteli by the brown streaked back and coral/red bill.

We saw 4 or more gambeli in the tall "poison hemlock" just east of the tobacco plantation. The bushes ranged up to eight feet. One Song Sparrow was also seen in these bushes. Although it was

Arnold M.V.Z. Berkeley, Calif.
1937

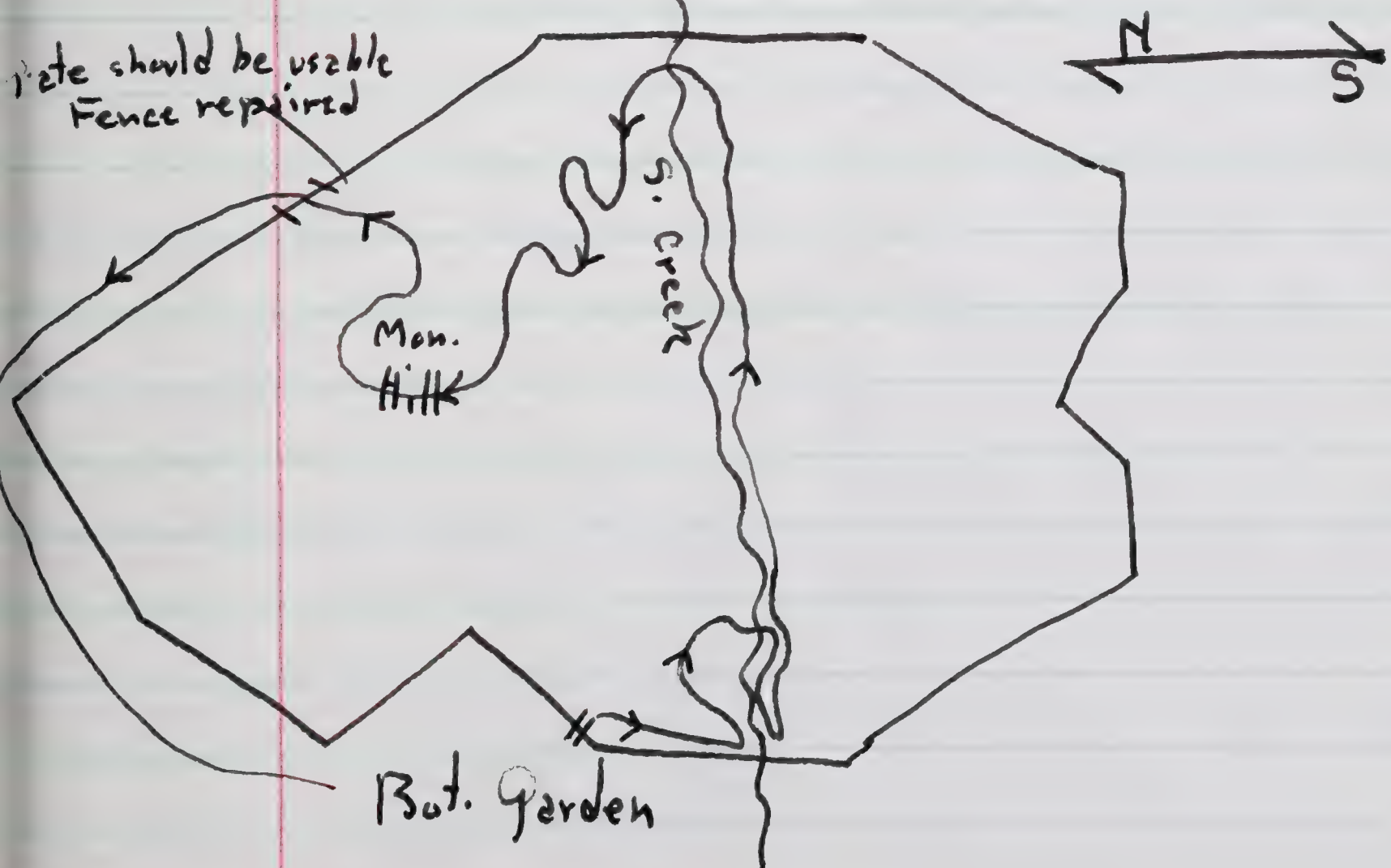
Oct 16,

our regular resident Song Sparrow it could have easily been a Rusty or some other migrant. Other birds seen are: 2 adult Red-tailed Hawks; 11 Spotted Towhees; 6 Brown Towhees; 1 Cooper Hawk; 6 Flickers; 5 Song Sparrows; 1 Thrasher; 2 Wren-tits; 1 Calif. Jay; 1 Hermit Thrush; 2 Anna Hummingbirds (making sizzor grindernotes); 6 Calif. Jays; 2 unknown; 1 Fox Sparrow (sip note); 1 Valley Quail (heard); 1 Bewick Wren; 1 Alaska Yellow Warbler; 9 Juncos; 1 House Finch (heard) 1 Golden-crowned Sparrow; 4 Green-backed Goldfinches; 1 Robin. It was interesting to note that just outside the area on the north side we heard a lot of commotion and a rustling of leaves ~~and~~ of a eucalyptus tree. In a moment a Red-shafted Flicker appeared around the tree with a Sharp-shinned Hawk close after it. The Flicker was making quite a commotion and appeared to be very frightened in spite of the fact that it was almost as large as the Sharp-shinned Hawk. We noted that the gate from the Botanical Garden into the open field of the "Primitive Area" should be swung so that it

Arnold
1937

M.V.Z. Berkeley, Calif.

Oct. 16, opened into the Area instead of into the Botanical Garden. This would eliminate the possibility of dirt covering over the base of the gate again. We also noted that at several points near the gate on the top of Monument Hill the fence could stand to be fixed. Dr. Grinnell also suggested that we put a lock on this gate and use it. This is the quickest way from Monument Hill to the Botanical Garden. We left the primitive area by way of this north gate at 11:40 A.M. Our route of travel is approximately as follows:



Arnold
1937

M.U.Z., Berkeley, Calif.

Oct. 16,

Spotted Towhees seem to be the most abundant birds on the section of the area covered today. It was interesting to note that the two Red-tailed Hawks seen spent considerable time (at least one of them) in the pines on Monument Hill. Perhaps they will build here next spring. At one place on the north hill (Mon. Hill) we saw some feces. Dr. Grinnell said that it was either dog or Coyote.

Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., Calif.

Oct. 17, This is a bright, sunshiny morning as was yesterday. Entered primitive area 10:14. Calif. Thrasher seen about 50 yds NE of creek at Strawberry Creek. ♂ Anna Hummer near same spot. — "Grind grinding." In middle of area I saw a S-shinned Hawk being chased by a humming bird (Anna). It took 1/2 hour to go from the west fence to the east fence of the area by way of the lower trail. There was noticeably more bird life near the west side of the area than near the east. I can see no apparent reason for this however. Due to lack of time I was only able to make a count of the birds along the lower path. This count was made between 10:14 and 10:45 A.M. There were more birds observed near the west fence of the area than near the east fence. The birds observed are as follows: Junco 3; Cal. Jay 5; Stellar Jay 1; Anna Hummer 1; Spotted Towhee 2; Brown Towhee 1; Calif. Thrasher 1; Song Sparrow 1; Wren-tit 3; Sparrow Hawk 1; Bewick Wren 2; Sharp-shinned Hawk 1; Flicker 4; Cooper Hawk 1;

Arnold
1937

Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., Calif.

Oct. 31,

Arrived at Botanical Garden
9:00 A.M. - Saw Mr. Bydon. It is
bright and pretty morning. As
it rained yesterday the plants
are covered with moisture.

Consequently I am going up
the fire road to enter the
primitive area by way of the
far north gate near the summit
of Monument Hill. At present I
am sitting outside of the area
on the west side about $\frac{1}{2}$ way
between the botanical garden
and the gravel pit. I have
a good view of the west
side of Monument Hill. This
portion is that covered with
brush and a few scattered
oaks. I heard a Titmouse in
one of the oaks, a Spotted
Towhee in the brush, two
Wren-tits, two Hermit Thrushes.

At 10:15 while coming along
the northwest corner of the
fence I frightened a covey of
approx. eight Valley
Quail. Three of these blew into

Arnold Primitive Area, Strawberry Canyon,
1937 Berkeley, Alameda Co., Calif.

Oct. 31,

the area while the rest of them lit in the chaparral just outside the area. I saw two Flickers perched on the top of a Cypress tree on Monument Hill. I also saw an Anna Hummingbird female sitting in the oak nearest the north gate. I am now sitting on the south side of Monument Hill. From here I command a view of the entire south side of the canyon but am too far away to hear any but the more distinctive birds. Several Hellar Jays can be heard on the opposite hills. Four or five Wren-tits. An Anna Hummer just flew from the eucalyptus trees on the southwest slope of Monument Hill to those in the middle of the "saddle" between the cypress trees. I saw two Scolophorus out on the rocky path just south of the summit. At some place I also saw two juncos. I hear a bird in the Bay tree at

Arnold 1937 Primitive Area, Strawberry Canyon,
Berkeley Alameda Co., Calif

Oct. 31

the bottom of the canyon which I
can not identify. It has a rather
"trill-like" note going:

Sweet-tweet-tweet

Siddle-iddle-eldle-iddle.

Several (3) Spotted Towhees. 3

Calif. Jays; 2 Flickers (in pines on
south side of canyon) 1 Stellar Jay,
4 Juncos, 1 Vigors Wren, Audubon
Warbler, 1 Western House Wren,
1 Golden-crowned Sparrow, 1 Ruby-
crowned Kinglet. By sitting in
one place in the chaparral and
and making noises with
my mouth I was able to
call six Spotted Towhees,
1 Hermit Thrush, 2 Jays (Calif.),
1 House Wren, 1 Golden-crowned
~~Kinglet~~ Sparrow, 2 Wren-tits.
(The Wren-tits came within
four feet of me) The rest within
ten feet of me. I spent
some time in the grass-
land east of the botanical
garden hunting for Meadow
Mouse runway. I found a
number of runs that could
have been used by meadow

Arnold Primitive Area, Strawberry Canyon,
1937 Berkeley, Alameda Co., Calif.

Oct. 31 mice but could find no feces.
The runs were indistinct
much as harvest mouse runs.
There was old and new cut
grass discernable. Spotted
Towhees were the birds most
in evidence today.

Arnold
1937

M.V.Z., Berkeley, California

Nov. 13,

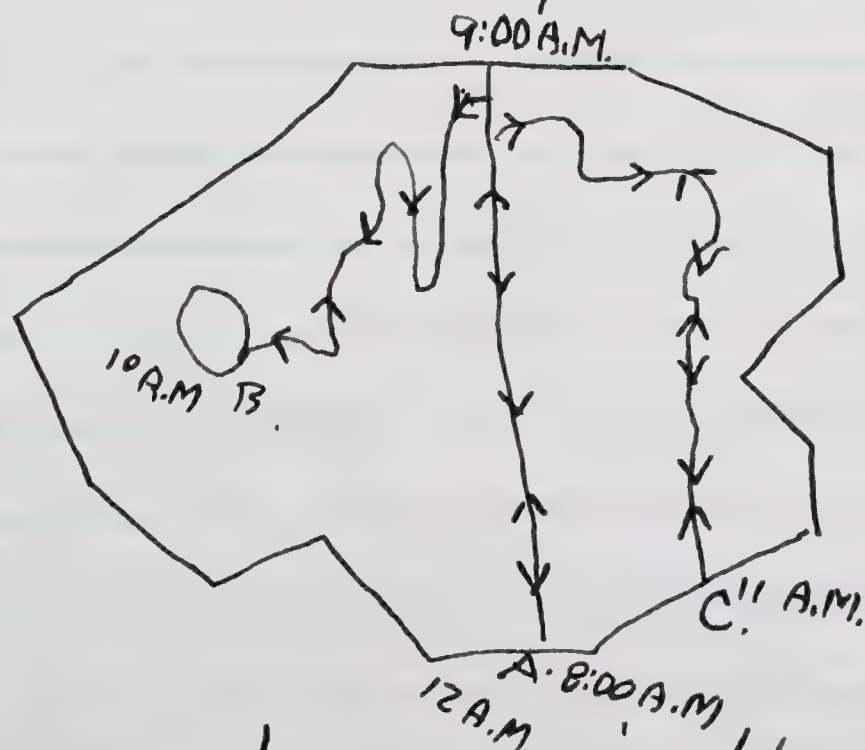
This morning I arrived at the primitive area at 8:00 A.M. It is a beautiful day. The air is cool and the sky clear. The brush had some moisture on it but as it has not rained for some time this must have been caused from the dew or fog. I took an "official" census of the birds of the area from eight o'clock to twelve o'clock noon. I started from the #1 gate, that is the gate entering from the tobacco plantation of the botanical garden. Miss Buchanan accompanied me as she was interested in observing Spotted Towhees. We took an hour to progress from the west to the east fence on the lower trail. During this time we saw more birds than at any other equal length of time on the entire trip. The new birds seen this morning for the first time consisted of Varied Thrush - 1 seen close up, three others seen flying high. Purple Finch - two seen flying over area. Western Gnatcatcher - flock of six seen near east fence among Baccharis. These birds were foraging in a well defined flock. They came within ten feet of me when I "squeaked" to them.

Arnold
1937

M. U. C., Berkeley, Calif.

Nov. 13

This is the first time I have observed these birds in such a distinctly formed flock. The Hermit Thrushes were by far the most common birds to be seen this morning—that is of those widely distributed. The American Pipit recorded was seen flying high over the area. The Willow Boring Woodpecker was seen in the top of an oak tree near the gate north of the tip of Monument Hills. It appeared to be feeding among the branches at the top of this tree. The grass was just appearing as a green fuzz beneath the taller grass & weeds. No hawks were seen inside of the area—which was quite significant. A number of Juncos were observed among the Baccharis near the spot where we saw the West. Gnatcatchers. The route taken this morning was as follows.



As can be seen in the map, each of

Arnold
1937

N.V.Z. Berkeley, Calif.

Nov. 13 the trails were covered twice. Starting at "H" to "B" then, over to "C" then Back to "H." One interesting feature was that I saw a ♂ Anna Hummingbird doing "courting dives" on the north hillside. It dove twice from an elevation of about 30 feet. After the second dive it flew off over the hill after another bird - probably a female. The Scolophorus were still out on the north hillside. Although I saw only two small ones out running around I turned over a small rock and frightened an adult. Whether or not this lizard was "bedded up" for the winter or not I can not tell.

UNIVERSITY OF CALIFORNIA

MUSEUM OF VERTEBRATE ZOOLOGY

CENSUS SHEET

Locality *Primitive Area, Strawberry Canyon, Berkeley, Alameda Co., Calif.*

Date *Nov. 13, 1937*

Observer *Lee W. Arnold*

Time in field *4 hours*

Approximate no. miles *3*

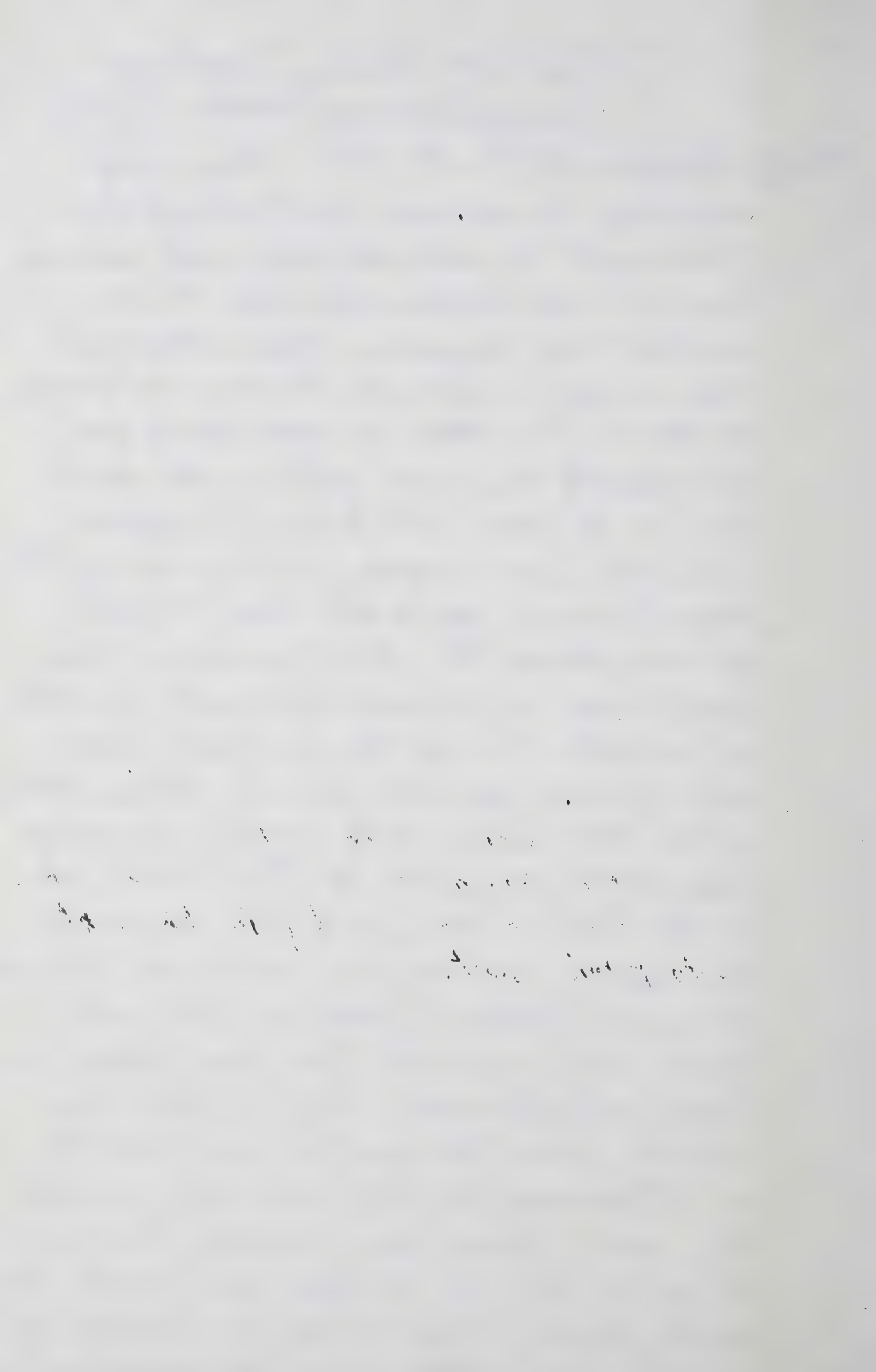
Nature of route (life zone, fauna, habitats) *From west fence to east fence of prim. A. on bottom trail. up the north trail & back to fence thence up south trail & back to fence & then to west end by way of lower trail.*

Weather *Clear, cool. -*

SPECIES	HOURS ➡	8-9	9-10	10-11	11-12	TOTALS
White-crowned Sparrow		///				
Hermit Thrush		/// //		///		
Calif. Thrasher		/	/		/	
Anna Hummer		/				
Red-shafted Flicker		/				
Calif. Jay		/// //		//		
Intermediate Wren-tit		/// //	///			
Song Sparrow		//				
Spotted Towhee		/// //	/	//	//	
Ruby-crowned Kinglet		/	/// //			
Junco		//	/// /			
Valley Quail		/		//		
Fox Sparrow		/		/		
Stellar Jay		/	/	/	/	
Varied Thrush		/				
Purple Finch			//			
Green-backed Goldfinch		/				
Ruby-crowned Kinglet			///			
Western Gnatcatcher			/// //			
Audubon Warbler			//			
American Pipit			/			
Willow Downy Woodpecker				/		
			To east fence.	To Wren. Hill	To G.W. Fence.	
TOTALS (hourly and grand)						

Primitive Area, Strawberry
Canyon, Berkeley, Alameda Co., Calif.

Nov. 27, Stopped at #1 at 8:15. Clear, crisp morning. Ground moist but shrubs dry. New growth of grass and weeds well under way. Two Calif. Jays heard on south hill. Flicker overhead. Song Sparrow in bushes along creek. There is about a five mile breeze which keeps the tops of the bushes and trees moving and consequently has some effect on the no. of birds to be seen. At 8:50 I frightened a flock of seven robins out of a tree at #2. Wren-tit seen in the top of a bush in spite of wind blowing. At 9:10 I arrived at the east fence after collecting quite a number of plants. Since the last stop I saw only a song sparrow. It is strange where all of the many birds usually seen along this route have gone to. At 9:50 I am on the knoll of the north hill where the two cypress and two pine trees are. I saw a single Audubon Warbler on this side. Heard two Wren-tits. Saw two Robins; one Junco; 4 Goldfinches - (Sp⁴). At ten o'clock from the gate just north of Monument Hill I saw five siskins fly over. There are several Juncos foraging in the bushes just inside the north fence. This area is surprisingly sheltered from the wind by Monument



Arnold 1967

Primitive Area, Strawberry Canyon, Berkeley
Ala. Co., Calif.

Nov. 27

Hill and the grove of cypress trees just north of the fence. At 10:20 I frightened a covey of approx. 20 Valley Quail from the low brush on the south side of Monument Hill at the point marked #3. They were apparently feeding in the brush when disturbed. At this spot, however, the wind is not strong enough to disturb the low bushes. At #4 on the map I found some fresh dung. - It looked much like that from coyotes. Shortly after seeing the quail another Audubon Warbler flew over. At 10:45 I saw a flock of 15 Pine Siskins flying up Strawberry Canyon at spot #5. When they saw me they turned in unison and flew back down the canyon. I also saw a print that looked like that of a dog in the soft earth at this spot. It was interesting to note that some of the birds very common in the area at other times were neither seen nor heard. - such as Spotted Towhees and Hermit Thrushes. The Robins were the birds most in evidence today. In most cases these, however, were seen in flight.

MUSEUM OF VERTEBRATE ZOOLOGY

Locality Primitive Area-Strawberry
Canyon
Date Nov. 27, 1937
Observer Lee W. Arnold
Time in field 3 hours
Approximate no. miles 2

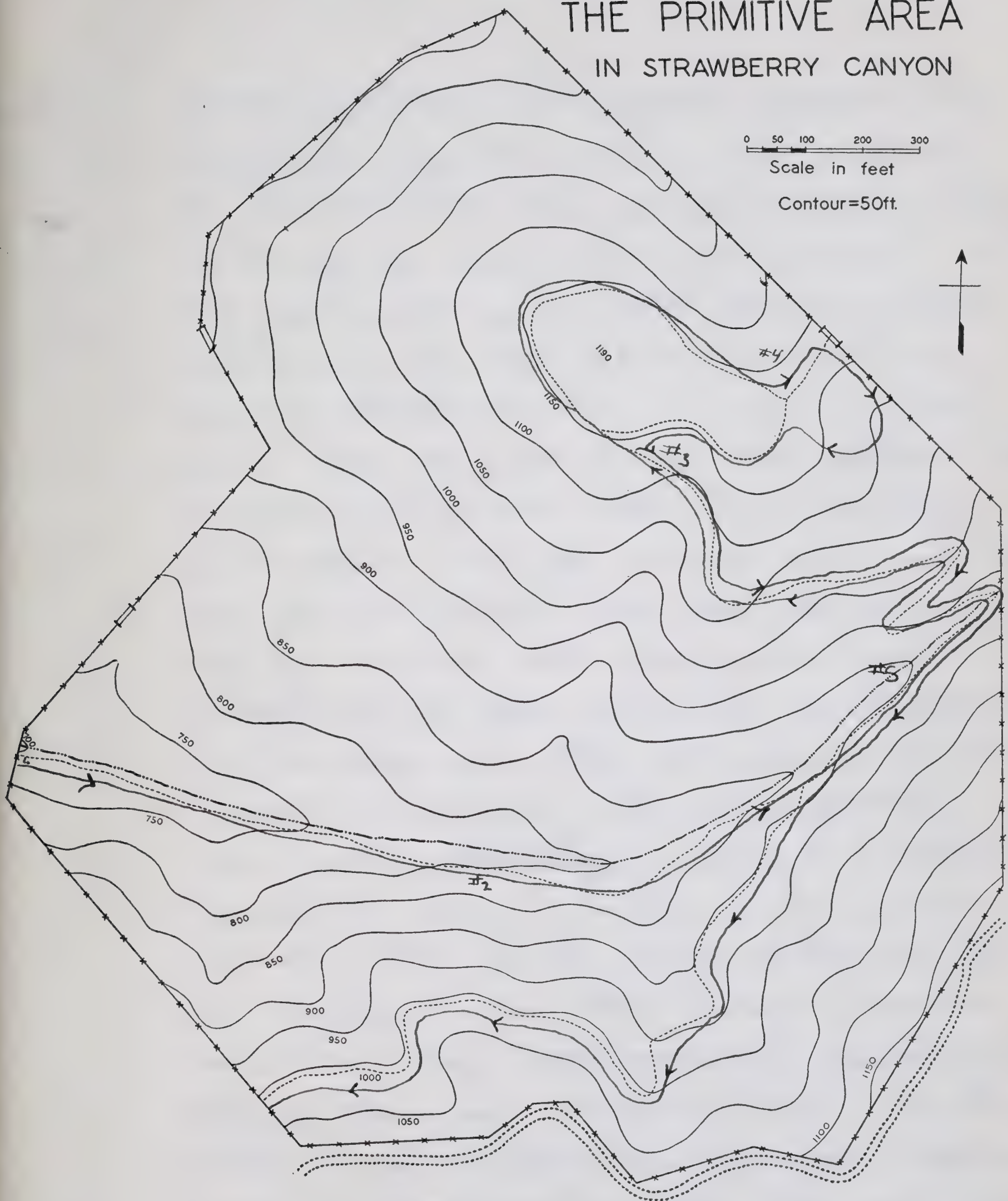
Along trail from west to east fence. Up north trail - back to creek - up south trail.

Weather

1m-4,'37

Arnold 1937
Nov. 27, 1937

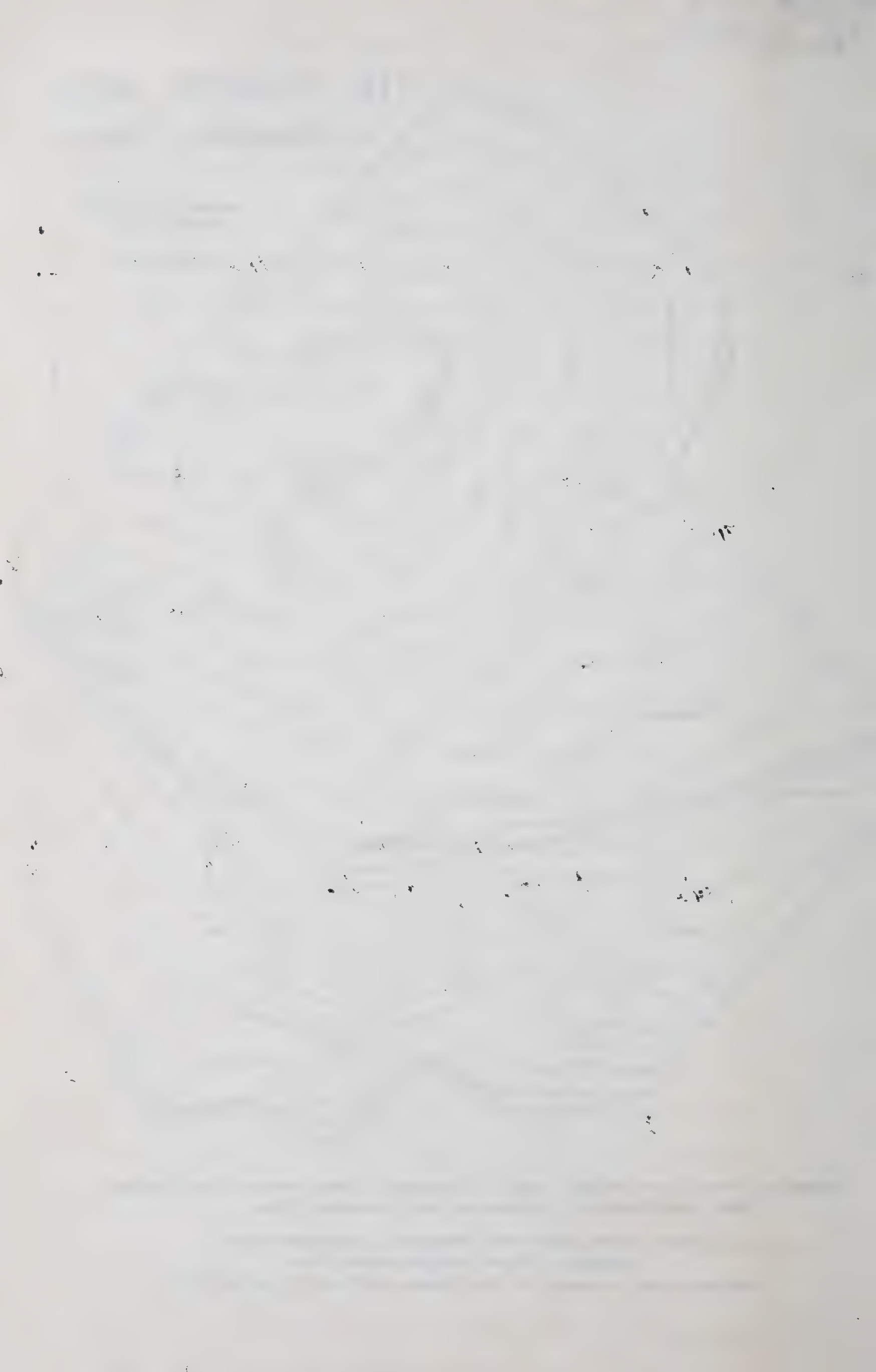
THE PRIMITIVE AREA IN STRAWBERRY CANYON



Outline of Fence from Blueprint Map of Strawberry Canyon, National Park Service—
State Park Emergency Conservation Work, November, 1934.

Contours from State Park Emergency Conservation Work,
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Drafted Under Auspices of WPA, Project 6079-5797 by C.M.T., 1937.



Donald
1937 Primitive Area - Berkeley

Dec 15,

several pictures of the pines & cypress trees we started down the path on the south slope of Monument Hill. Here we took several pictures of the various associations but could not get any good cross-canyon shots because of poor lighting. On the slope SW of "Pine Point" we heard a Thrasher and saw a Calif. Jay. Upon going down the path toward the bottom of the canyon I noticed some fresh feces (dog-like). I also noticed that the brush-rat nest under the Bay tree on the trail had been torn from its location and the rats had placed some freshly cut oak twigs and leaves over the opening to the stump where they live. Upon hitting the stump I could hear the rats scampering about within ~~the stump~~ it. It will be interesting to note the rate of buildup of the new nest. Near the bottom of the canyon in the sunlight we frightened over thirty Juncos from the low bushes. They were apparently feeding here. Although there were numbers of birds along the bottom I did not have time to record them as we had to hurry back so that Fitch could keep an appointment.

Seasonal Status:

Because of the brief time and the emphasis on pictures I could not note as many birds as I would have otherwise. The new growth of

Arnold
1937

The Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., California

Dec. 15,

Henry Fitch and I went up to the area this morning to take pictures of the various association groupings of the plants of the area and the general lay of the land. We left the Botanical Garden at 11:30 A.M. and went to the north gate of the area by way of the outside path. While still outside of the area we saw a Cooper (hawk) at the spot marked on the adjoining map (B2). It flew up from the brush on the side hill and disappeared among the pines. We traveled up the road to the north side of the area and thence up the north fence. From here we saw: 1 Calif. Jay; 1 Spotted Towhee; 3 Juncos; 2 Brown Towhees at places marked on adjoining map. We took several pictures of the area from the northern section but because of Henry having an appointment we were unable spend enough time to get all the views of the area needed—consequently we will have to make another trip for that purpose at a later date. On the top of Monument Hill we saw two Robins in a Madrone tree, heard two Red-breasted Sapsuckers, and some Siskins in the pines but could not see them. We frightened an adult Red-tailed Hawk from the pines also. It flew down the hillside and northward. (After taking

Amold
1937

Primitive Area, Berkeley

Dec. 15 grass is up to about three inches in most places. Most of the perennials are commencing to bud out while the California Poppy plants are about 4 inches high. I am going up tomorrow to make further observations. The pictures taken ~~here~~ their approximate localities marked on the adjoining map as follows:

CENSUS SHEET

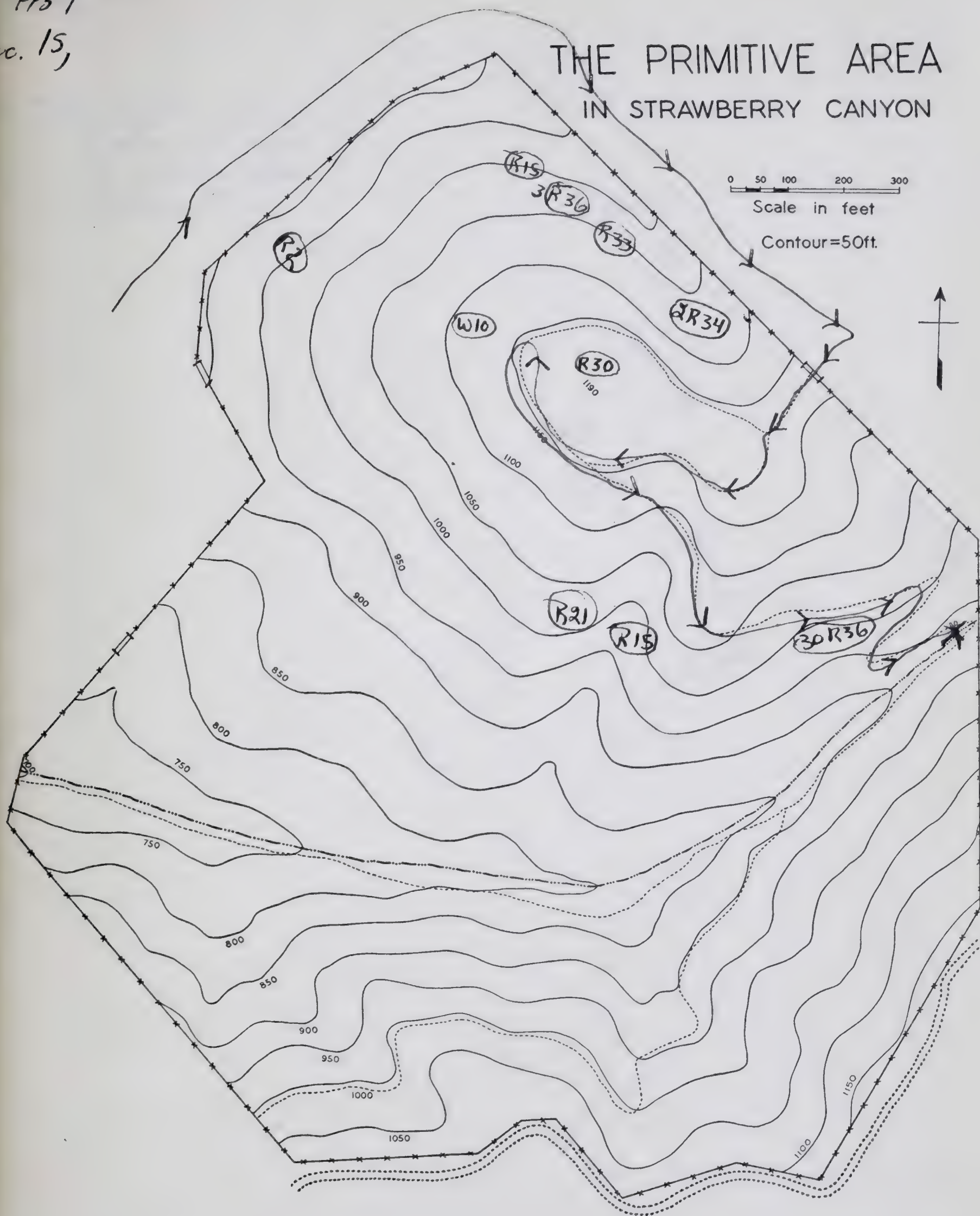
Weather. Fair - Breeze - Few clouds.

1m-4,'37

Arnold
1937

Dec. 15,

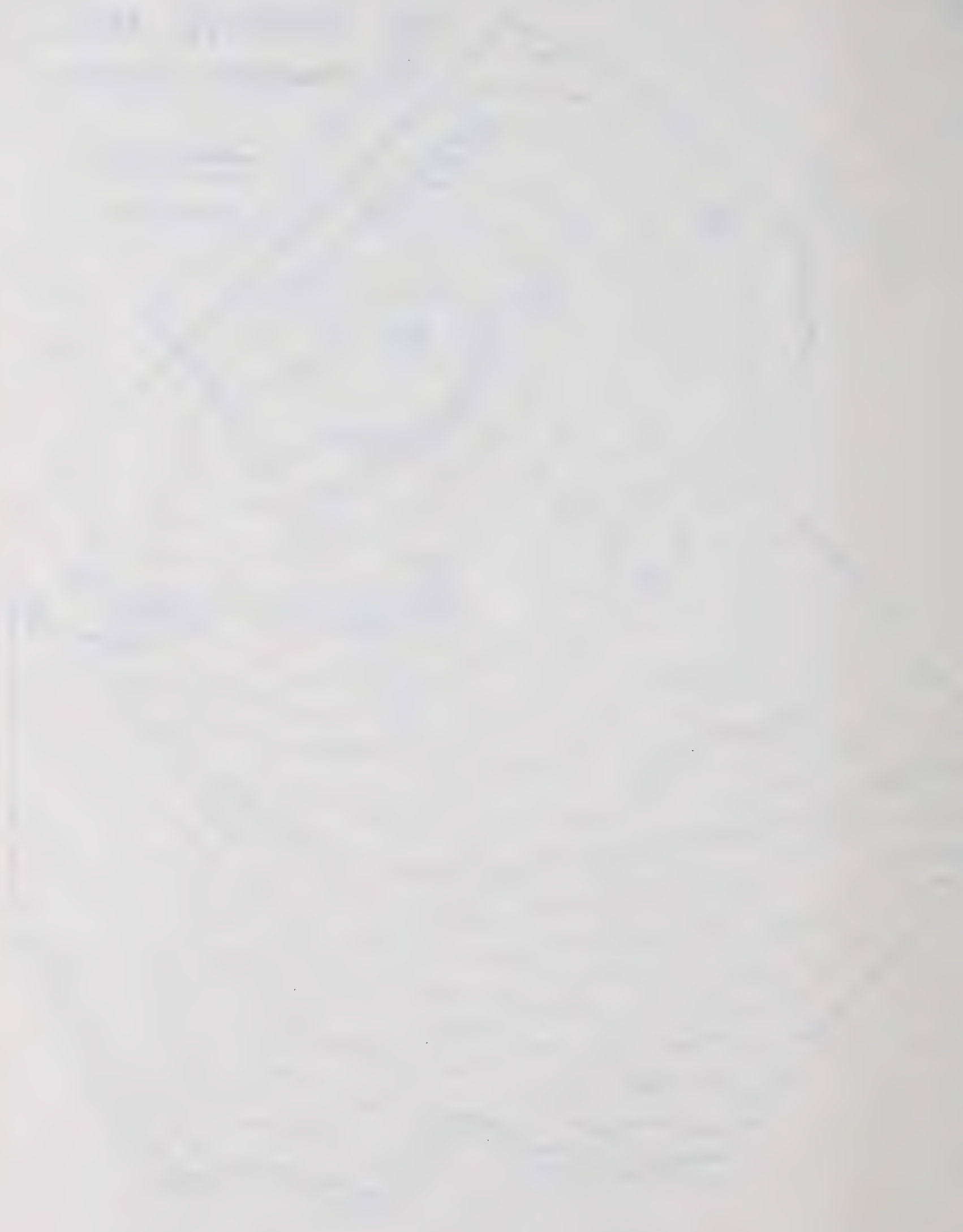
THE PRIMITIVE AREA IN STRAWBERRY CANYON



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State Park Emergency Conservation Work, November, 1934.

Contours from State Park Emergency Conservation Work,
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Drafted Under Auspices of WPA, Project 6079-5797 by CMT., 1937.



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CHICAGO, ILLINOIS
1960

Arnold
Dec. 15, 1937

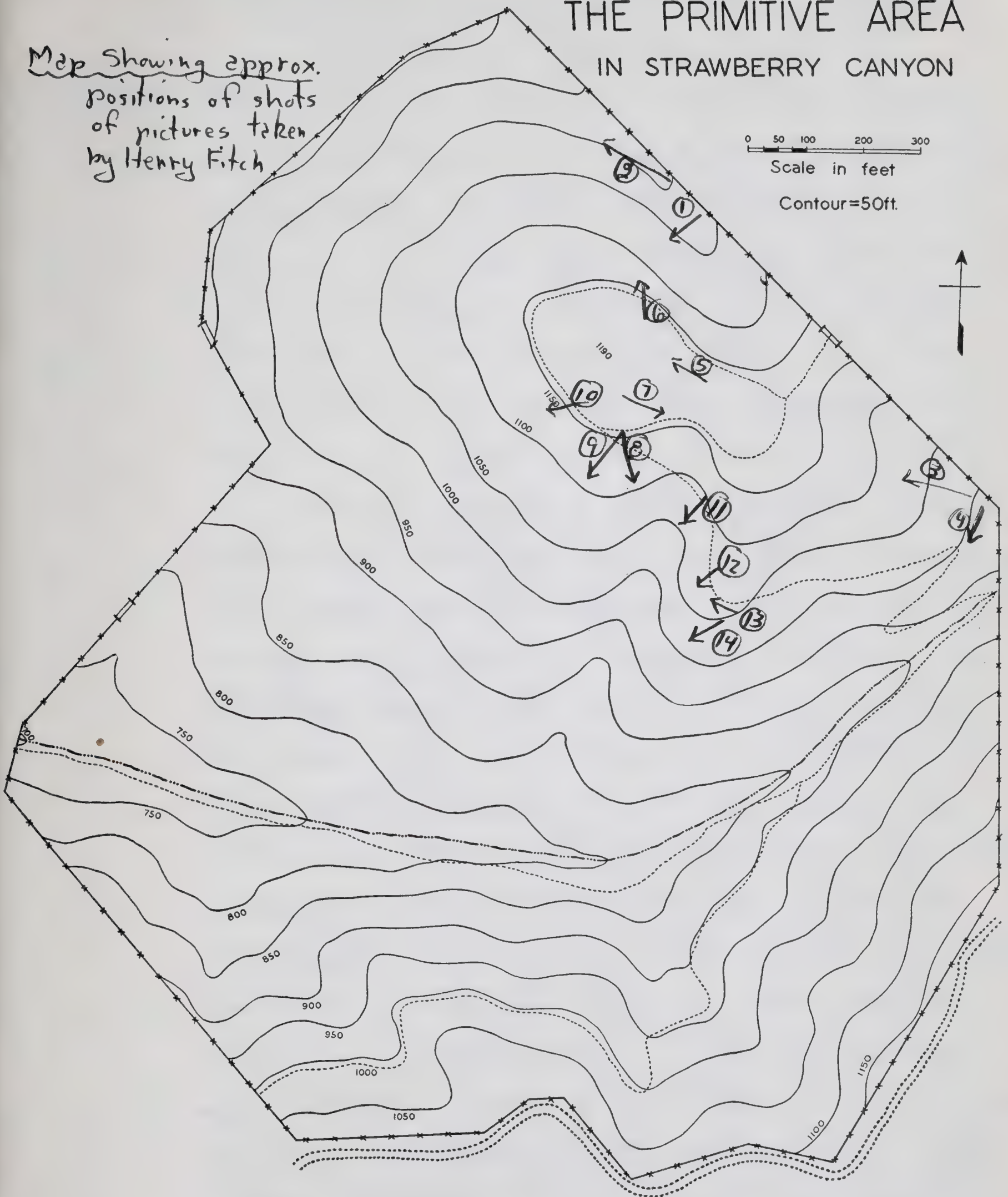
Map Showing approx.
positions of shots
of pictures taken
by Henry Fitch

THE PRIMITIVE AREA IN STRAWBERRY CANYON

0 50 100 200 300

Scale in feet

Contour=50ft.



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Amos
1937

Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., Calif.

Dec. 16, Arrived at the area at 11:00 A.M. Brought up another load of trays to set out. Am setting them on the lower trail. I am at present about $\frac{1}{2}$ way between the east and west fence. Just in front of me in the willows are two Calif. Jays. To the right of me I saw a Fox Sparrow and two Song Sparrows. This is a clear, sunshiny morning with a slight breeze. A Mourning Cloak butterfly just flew around my blue jacket as I am sitting here. Its wings were heavy and made a "papery" sound as it fluttered about. At 12:10 I saw a Calif. Thrasher fly from the side hill (south) to the north side about 50 yds. from the creek in the middle of the area. Soon after I heard a Calif. Thrasher call from the very spot from whence the first one flew. There is a Steller Jay in the willows just in front of me. Two flickers are "messing around" in the outer branches of the madrone tree behind me. At this distance I can not tell whether they are foraging or not. They shortly flew to the pines on the opposite side of the canyon. An intermediate Wren-tit is jumping about in the branches about five feet below me.

unmold
1937

Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., Calif

Dec. 16 A Calif. Thrasher was seen across the canyon in a single clump of Baccharis as shown on the map. Two Juncos in oaks (1:20) as shown on map. (Others heard). An Audubon Warbler seen flying down the canyon at this point. This is the place where we saw such a large flock of Juncos three days ago. At 1:40 P.M. I am on the top of the knoll from Monument Hill. I saw two Western Gnatcatchers in the ravine just west of here. I also heard several Bush-tits but could not see them. From this vantage point, I can hear Wren-tits on the opposite hill but can not place the exact spots where they are. I frightened a flock of approx. 20 Valley Quail from the low Baccharis bushes just south of the crest of the hill. Some of them flew over the hill and two lit in the pines at the top of the hill. No birds seen on top of Monument Hill. I noticed two small pine trees starting to grow. ~~One~~ beneath one of the larger Pinus radiata on the top of the hill. Apparently this tree has become acclimated enough to start reproducing in this area. I just saw a 3 inch Scolophorus run down

to the University of Michigan

and the University of California

and the University of Texas

Amolel
1937 Primitive Area, Strawberry Canyon
Berkeley, Alameda Co., Calif.

Dec. 16,

a small hole about 50 yds south of the summit of Monument Hill.

At 2:20 I am on the side hill just north of the clear space east of the botanical garden in the Beucharis I saw a Spotted Towhee. I saw two Song sparrows in the open space and a number of other birds. ~~and~~ These proved to be Rufous-crowned Sparrows (6). They were quite unmindful of my presence and allowed me to advance within about ten feet of them. When frightened they flew to the brushy side-hill.

Caught an adult Song Sparrow in trap about 150 yds east of west fence. - It had reddish brown tail & back.

Intermediate wren-tit — In Sequoias on south hill. At 3:30 I was sitting at the west end of the south trail. From the sounds in the thickets between here and the Pines there must be ten or more Song Sparrows. I also hear a Wren-tit. Just saw four birds fly over with a "chip" like an Audubon Warbler — but could not be positive. The bird most in evidence today seems to be the Song Sparrow.

1

1000

Arnold
1937

Primitive Area

Dec. 16,

In my 12 mouse traps I had set out I caught four mice. 2 Peromyscus maniculatus gambeli and 2 Peromyscus truei gilberti. I marked one of each species in the following manner

#1 Ad. ♀ Peromyscus maniculatus

Caught dead
Dec. 19, 1937
Same locality

Caught 30 feet east of the west fence just north of the trail at the base of a cut away portion of the bank. The trap being set at the entrance of a large "erosion" hole. Ran down hill when freed.

—Marked with nip out of ear #1.

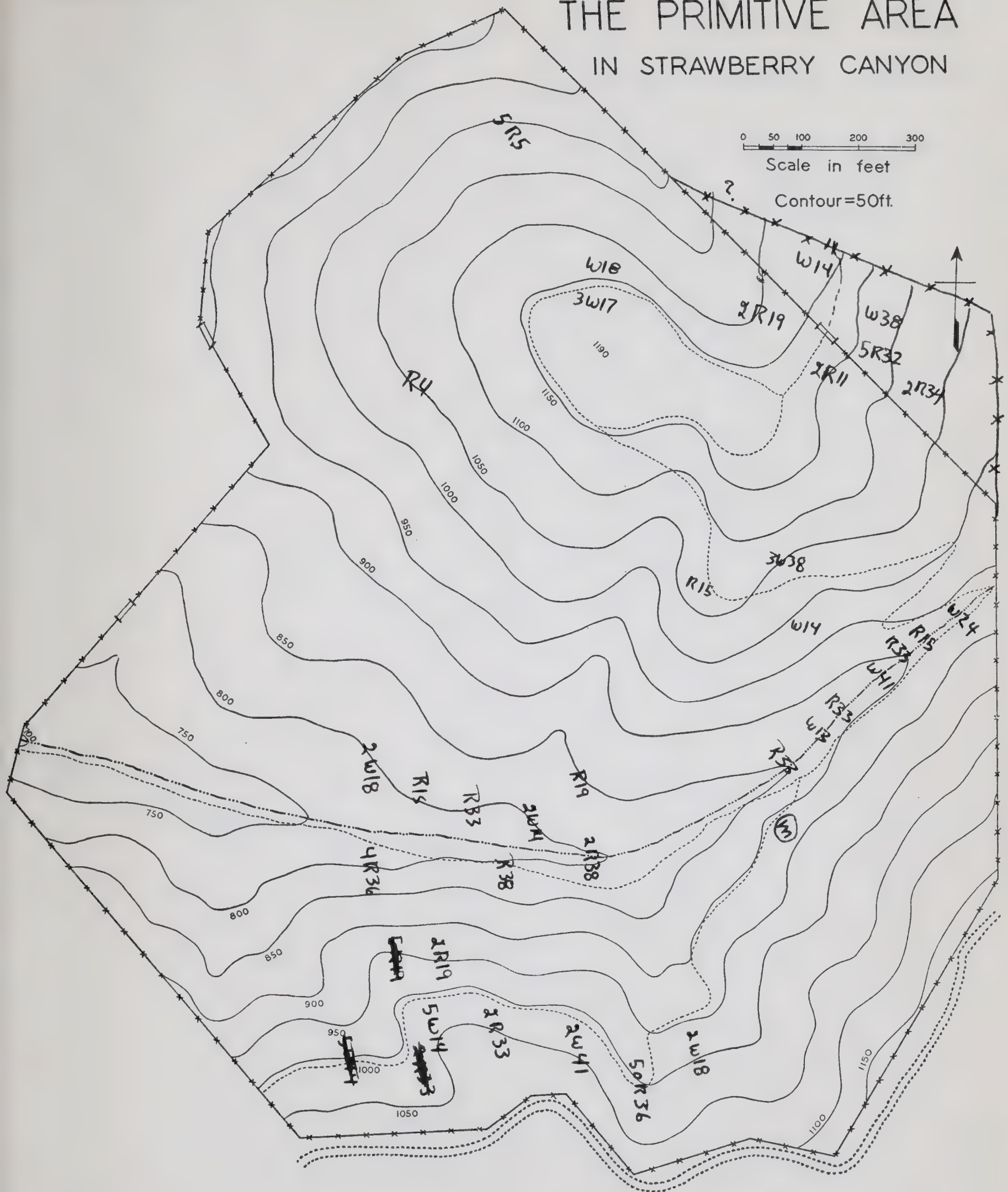
#2 Ad. ♂ Peromyscus truei gilberti

Caught 300 feet east of west fence. Marked with #1 mark. When liberated it ran up the hill into a thicket of ferns

Of the other two one escaped (truei) and the other was dead (man.) + Set out the other traps—making about 30 sets in all.

Arnold
Dec. 31, 1937

THE PRIMITIVE AREA IN STRAWBERRY CANYON



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Contours from State Park Emergency Conservation Work,
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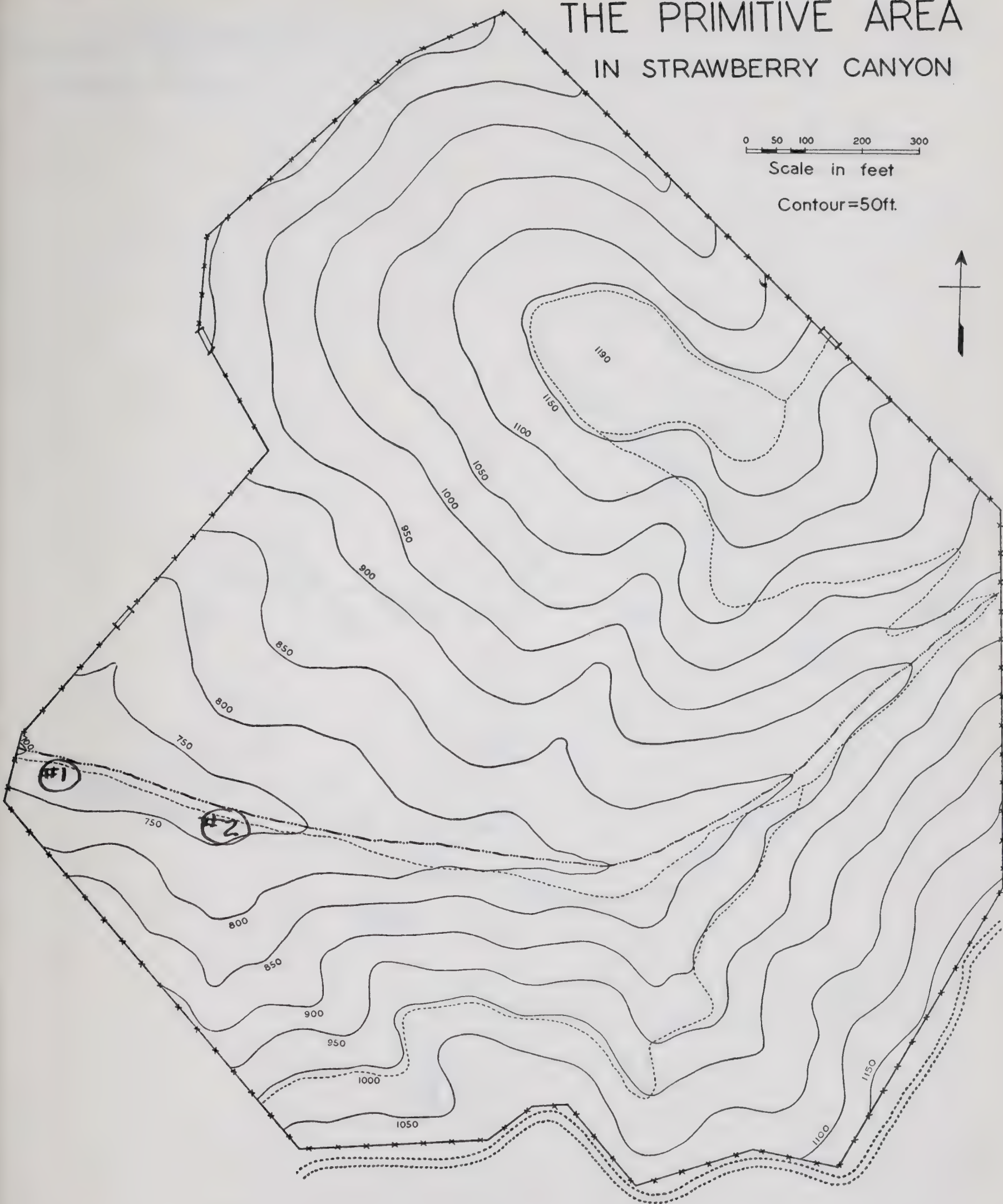
Mammals marked
Dec. 16, 1937

THE PRIMITIVE AREA IN STRAWBERRY CANYON

0 50 100 200 300

Scale in feet

Contour=50ft.



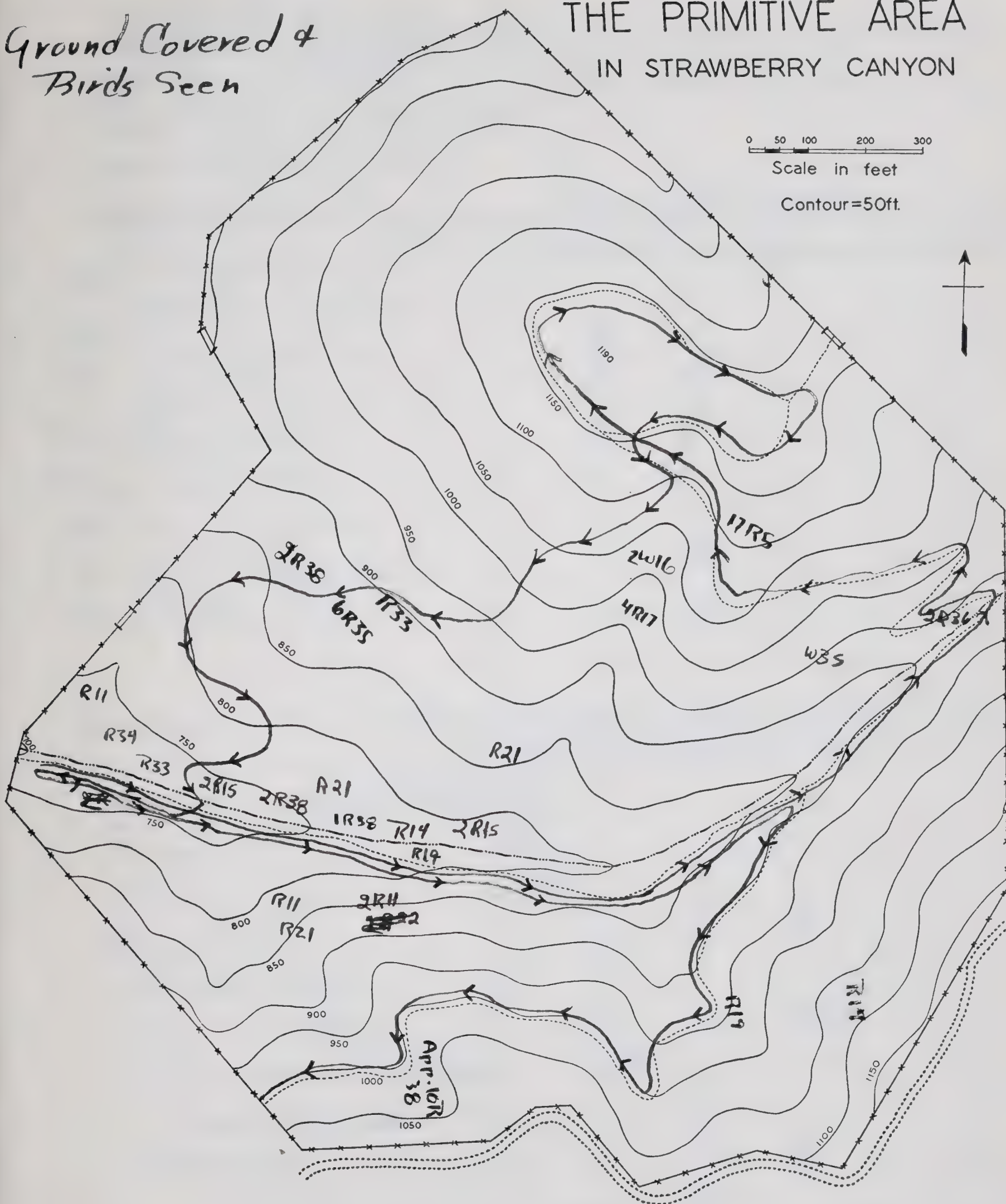
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Ground Covered &
Birds Seen

Scale in feet
Contour = 50 ft.



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Locality Primitive Area, Strawberry Canyon,
Berkeley, Ala. Co., Calif.

Date Dec. 16, 1937

Observer Lee W. Arnold

Time in field 11-4 (5 hours)

Approximate no. miles 3

Nature of route (life zone, fauna, habitats).....

As shown on map

Weather Clear & mild

SPECIES	HOURS ➡	11:-11:30	11:30-12	12-12:30	12:30-1	1-1:30	TOTALS
R33 Spotted Towhee		1					
R38 Song Sparrow			11	1			
R15 Calif. Jay			11	1			
R17 R.S. Flicker			11	11			
R19 I. Wren-tit			1	1			
R34 Brown Towhee		1					
R21 Calif. Thrasher				11			
R14 Stellar Jay				1			
<hr/>							
		1:30-2	2-2:30	2:30-3	3-3:30		
Western Gnatcatcher		11					
Bush-tit		1111					
Valley Quail		1111 11					
Wren-tit					11		
Spotted Towhee			1				
Song Sparrow			11		11111		
Refus-crowned Sparrows			1111				
Song Sparrow				1			
Unknown					1111		
<hr/>							
TOTALS (hourly and grand)							

11

Arnold
1937

Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., Calif.

Dec. 17,

I entered the area by way of the north gate at 12:10. Several Juncos ~~seen~~^{heard} in chaparral just inside the fence while even more were heard in the cypress trees just outside the fence. Flume run - fresh since last rain a week ago was seen - marked (a) on map. No birds seen on top of Monument Hill - probably because of good freeze. At 12:25 a flock of eight Golden-crowned Sparrows were seen in the Bacharris on "Pine Point." While going down the hill I noted the front leg of a Zylvilagus bachmani hooked in a strand of barbed wire approximately 30 poles north of Strawberry Creek on the east fence. The leg had been severed at the scapula and appeared to have been hanging there for about two days. I brought the leg back with me for identification (b. on map).

I am sitting about 50 ft. north of Creek and about 150 feet west of east fence. Called four Wren-tits and a Spotted Towhee close to me. I noted that the Toyon berries are still on the ~~trees~~ bushes in some places.

Arnold

1937 Primitive Area, Strawberry Canyon,

Berkeley, Alameda Co., Calif.

Dec. 17

At 12:50 I am on the bridge at the east fence where the creek goes through. An adult Red-tailed Hawk just lit on a fence post just north of here at about the same place where I found the Rabbit's foot. It stood there preening for a few minutes and then flew outside of the area. I heard a Vigors Wren in the brush around the bottom of the Bay Tree about 50 yards north. There is a Wren-tit behind me in the bushes. At 1:02 a Fox Sparrow and a Song Sparrow were seen 100 yards west of the east fence.

I had my catch-alive mouse traps set at intervals of approx. every thirty feet — starting at the west fence and paralleling the lower path. — As shown on the adjoining map. I was at sea as to ~~as to~~ to which system to use for marking closely related species. Dr. Hall thinks it would be better to have no closely related species with duplicate numbers. This is not the way that I marked them at first but is the manner I

Arnold
1937. Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., Calif.

Dec. 17, will use hereafter. Yesterday I marked two mice. — 1 Peromyscus maniculatus and 1 Peromyscus truei gilberti. I gave each the #1 mark (see chart for marking). Today I marked two Peromyscus m. g. and three P. t. g. using the system whereby I gave each species separate numbers. Hereafter, however ~~each~~ ^{set of} there will be one series of numbers for all the mammals. This will avoid confusion.

The following are the mammals marked today:

3 Ad. ♂ Peromyscus maniculatus

Returned Dec. 19
Almost frozen
Liberated after warming.
Ret. Dec. 17
Caught in ferns on steps. The seventh step — 1st group of steps from the west fence — When freed it went uphill.
— Given #2 marking.

4 Ad. ♂ Peromyscus truei gilberti

Caught beneath elderberry tree by path 50 yds west #3
Ran down hill when released.
— Given #2 marking

5 Ad. ♂ Peromyscus truei g.

Caught 20 ft. west #4

Arnold Primitive Area, Berkeley, Alameda Co.,
1937 Calif.

Dec. 17

when released it ran down hill.
— Given #3 marking

6 Ad. ♀ Peromyscus truei gilberti
Caught 50 feet east of 2nd
big bay tree from fence (west)
along the bottom trail.
— Given #4 marking

Dec. 20 - Dead
12.17.37

7 Ad ♂ Peromyscus maniculatus
Caught fifty feet east of 1st
bay tree and 20 feet west of 2nd
bay tree. — Ran down hill.
— Given #3 marking

Others caught but dead in traps
were:

1 ♂ Reithrodontomys megalotis
1 ♀ Peromyscus truei gilberti
1 ♂ Peromyscus maniculatus

(At same spot where
#1 ad ♀ was marked yesterday)

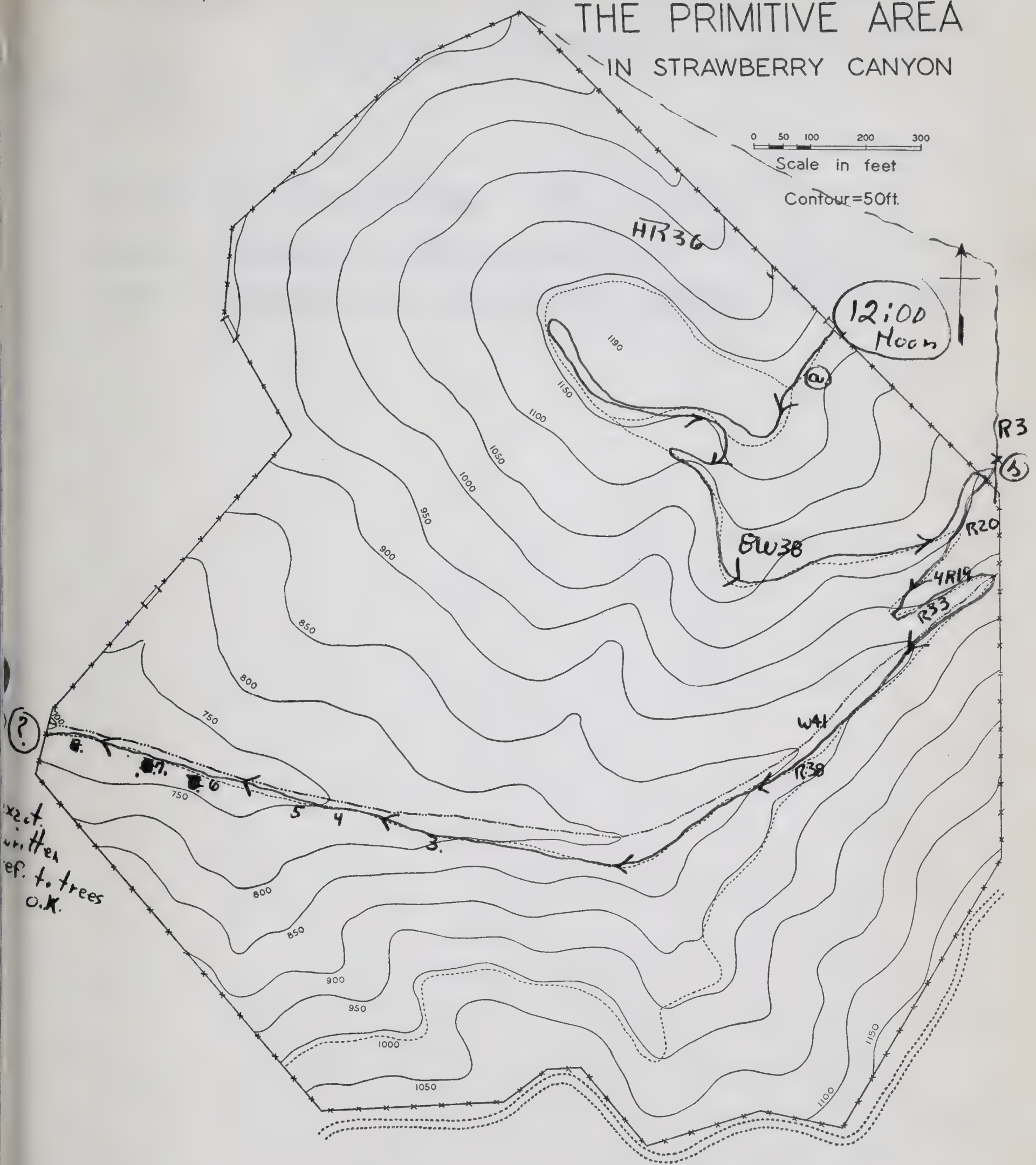
11

1001.

[The remainder of the page contains extremely faint, illegible text, likely bleed-through from the reverse side.]

Arnold
Dec. 17, 1937

THE PRIMITIVE AREA IN STRAWBERRY CANYON



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Arnold

1937

Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., California

Dec. 17,

619♂ Reithrodontomys 134-66-18-12

620♀ Peromyscus truei gilberti 185-92-23-20

621♂ Peromyscus maniculatus gambeli 147-68-20-14

Amald

1937

Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., Calif.

Dec. 19,

I entered the area by way of the botanical garden. While proceeding along the west fence I saw an adult Citellus run into a hole under the fence. He ran from the botanical garden but the hole proceeded under into the dirt of the primitive area. The clear, bright weather we have been having probably accounts for the presence of this squirrel. The location of the fence is shown at the spot marked (a) on the map for this date.

I saw this animal at 2:10 P.M. In the trapline along the lower trail I caught the following.

Ad. ♀ Peromyscus maniculatus
50 feet west of 2nd and 75 feet east of 1st bay tree -
Dead in trap.

Peromyscus maniculatus
75 feet east of 2nd Bay tree on lower trail. Escaped unmarked.

Ad. ♀ " 100 ft. east of 2nd Bay Tree on lower trail. - Dead.

#8 Imm. ♀ Peromyscus truei gilberti
30 feet west of 1st elder

Dec. 20.
Ret. same trap.

Arnold
1937

Dec. ~~20~~¹⁹, on the lower trail.

Adult ♀ Peromyscus truei gilberti
20 ft. east of 1st elder - dead

#9 Imm. ♀ Peromyscus maniculatus
Top of 1st steps east of
fence.

Ret. Dec. 20
7th step.

#10 Ad. ♂ Peromyscus maniculatus
20 feet east of the top of 1st
step at the bottom of a rock
outcrop.

#11 Ad. ♀ Peromyscus truei
60 feet east of top of 1st
step

#12 Ad. ♂ Peromyscus maniculatus
30 ft. east of #11
Caught in about 15
minutes in can 30 feet
east.

Dec. 20 -
Caught in
can - dead.
#13

#13 Ad. ♂ Reithrodontomys megalotis
30 ft. east of can where
#12 was caught.

Ad. ♀ Peromyscus truei -
Just changing from juvenile

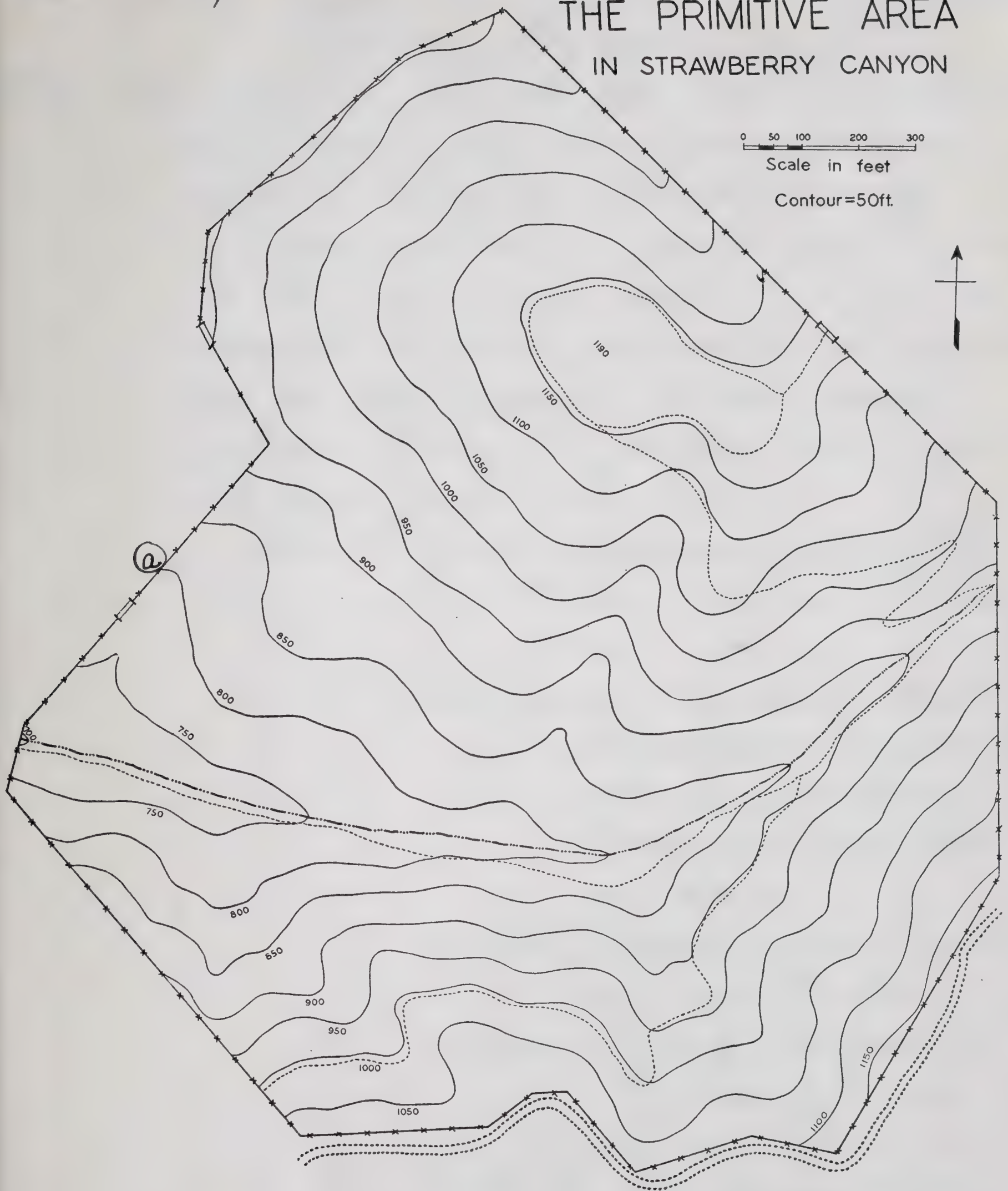
Arnold
1937

Dec. ~~20~~¹⁹, pelage. 60' east of #13

Because of the number found dead
I am placing more cotton in all of
the traps in an effort to discover
whether or not they are dying because
of coldness.

Arnold
Dec. 19, 1937

THE PRIMITIVE AREA IN STRAWBERRY CANYON



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Arnold
1957 Primitive Area, Strawberry Canyon,
Berkeley, Alameda Co., Calif

Dec. 20, Went up to the area and around to the traps. Had very poor luck in spite of having filled the traps with more cotton for nests. Have come to the conclusion that it is just as essential to have a quantity of available food in the trap as to have enough cotton. Today I packed the traps with quite a bit of food.

#14 Im ♀ Peromyscus maniculatus
50 feet east of 1st bay tree.

The following were found dead:

1 Imm ♂ Peromyscus maniculatus
10th step from top of
1st group of steps from
west fence.

1 Ad ♀ P. truei - base of rocks
at top of 1st steps.

1 Imm. ♀ P. m. g. West end of
1st berry tangle
on top of steps.

1 Ad. ♂ Reithrodontomys
megacotis - Middle
of bramble tangle.

The only observation of birds was
a small flock of Bush-tits heard

Arnold
1937 Primitive Area, Strawberry Canyon
Berkeley, Alameda Co., Calif.

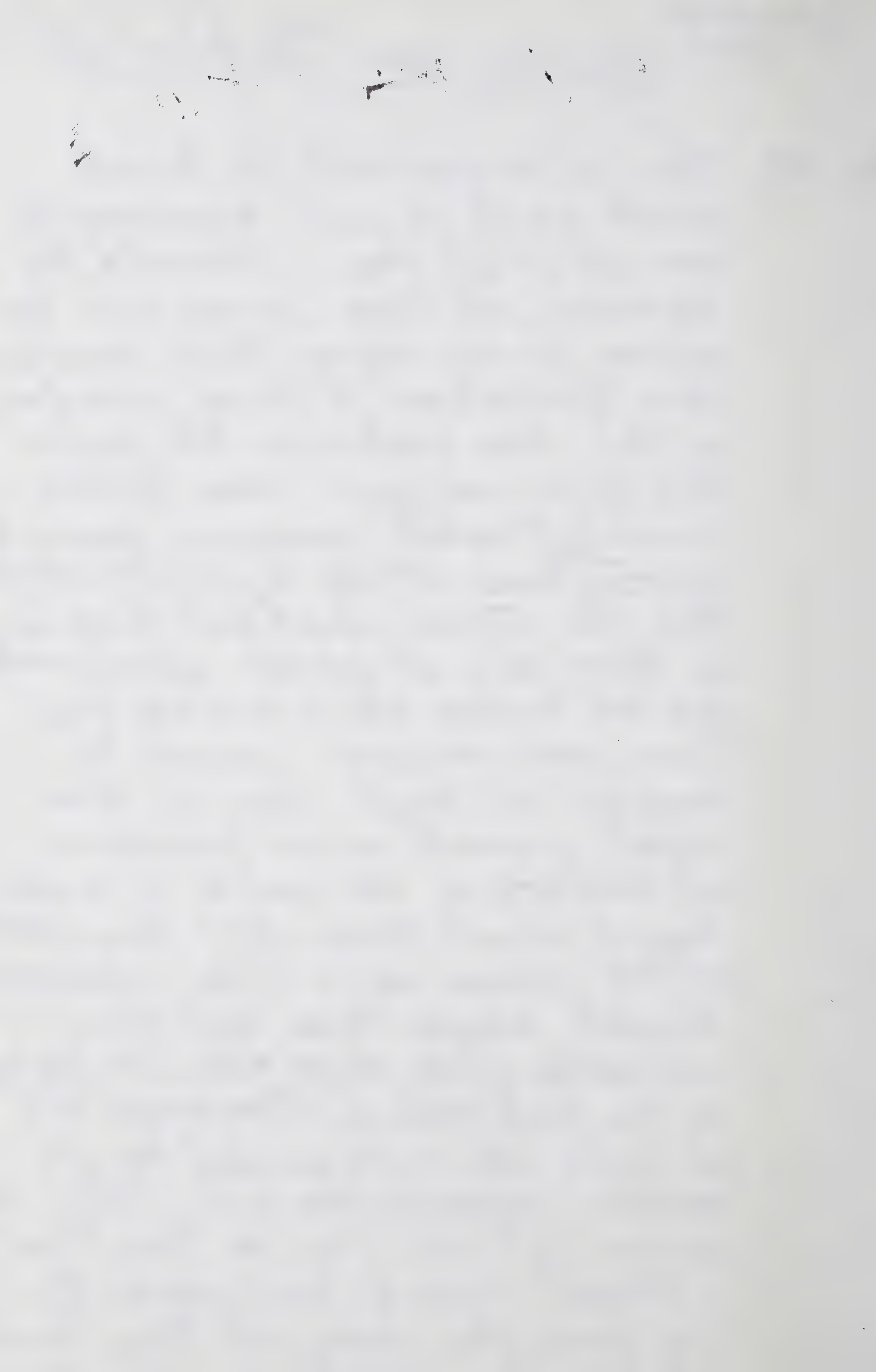
Dec. 20 and a Sharp-shinned Hawk seen ~~to~~ south of trail near the west fence (200 yds. east). Other birds not recorded.

Dec 21, I went up to the area with Dr. Alden Miller. We were walking around the Northwest corner of the area at 12:35 when we frightened a covey of twenty Valley Quail. Most of them remained on the outside of the fence but five flew into the area, — three flying across the small ravine into the tangle of Current, gooseberry and poison oak. I saw one Hermit Thrush. We heard a Townsend warbler in the cypress trees on the outside of the fence. On driving at the north gate I saw the following: 2 Flickers; 2 Brown Towhees; 1 Calif. Jay; 1 Golden-crowned Sparrow. Five Green-backed Goldfinches flew east over this end of the area; 2 Wren-tits. Dr. Miller called my attention to the fact that the oak-moth ~~cat~~ larvae had been feeding on the oak tree near the fence.

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this is responsible for the new growth which is just beginning to come out all at once. Probably the appearance of these worms was the reason for my seeing Black-throated Gray Warblers and a Downy Woodpecker on this tree earlier in the season. At 12:55 we saw three Golden-crowned Kinglets foraging among the cypress ^{& Pine} trees at the top of Monument Hill. Dr. Miller identified them first by their tit-tit-tit-tit notes (sounding, when put together, like a squeaking hinge). These were foraging among the needles and twigs. One of them spent a minute or so hammering at something in the crotch of a small twig. I do not know what they were after. There was a Ruby-crowned Kinglet among them but this presently flew down into the brush on the north side of Monument Hill. It could be distinguished by its metallic sequestration note. At 1:10 we saw a Calif. Jay on "Pine Point" - a Hermit Thrush was seen to fly from the base of "Pine Point" into the thicket of brush on the



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opposite side of the hill about 75 yds. south of the creek and next to the fence. Two Golden-crowned Sparrows were seen on the east side of this point. From the bottom of the canyon next to the bridge we saw a Thyrtle Warbler. It was in Imm. plumage — Dr. Miller said one could tell it by its more mellow call note. ~~From~~ It was foraging among the willows in the bottom of the canyon. A Spotted Towhee a Fox Sparrow and a Calif. Jay were also seen from this location. Dr. Miller said that the shrub that is so common in the thickets on the south side of the canyon is Ribes (current). 100 yds west of east fence — Spotted Towhee; Song Sparrow south of trail; Varied Thrush flew into thicket at bottom. At 150 yards another Spotted Towhee. The nest in the willows along the path (According to Dr. Miller) is probably a Russet-backed Thrushes nest. The closely packed material is indicative of this. 300 yds. west of the east fence I saw two Song Sparrows. At 2:30 in the middle of the area on the

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Dec. 20 lower trail I saw: 2 Hermit Thrushes;
1 Wren-tit; Song Sparrow; Spotted Towhee;
Calif. Jay; 4 Juncos; 2 Ruby Crowned
Kinglets. While tending my traps I
did not attempt to keep bird notes.
Upon going up the south trail I noted
a mole run about 75 feet south of the
creek above the large bay tree where
the trail goes up. (m. on map - trail too
far from east fence). From here I
continued on ^{up} the trail - through
the Squaws, and out into the brush.
I noted two Ruby-crowned Kinglets
in the pines. There was a flock of
approx. fifty Juncos high upon the
side hill above the path. I also saw
2 Fox Sparrows; several (~~not~~ heard)
Wren-tits; several (heard) Hermit Thrushes
~~and~~ ~~two~~ Spotted Towhees.
At 3:00 P.M. while sitting beside
the fence on the west side of the
area I saw a Sparrow Hawk flying
over the pines on Monument Hill.
It was calling with its usual note.
I also saw a Red-tailed Hawk far
west of the area. I had very good
luck in my traps this morning -
catching a number of mammals

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Dec 21 First I will give the numbers of the traps and the approximate locations of each. Later I will enumerate those caught.

Trap No. Location & Asso.

1. TinCanTrap 30 ft. from west fence at base of cut away portion of bank. Trap set at mouth of "erosion" hole.
2. T.C.T. In trail at base of 1st Bay tree
3. T.C.T. In trail — $\frac{1}{2}$ way between 1st & 2nd Bay Trees.
4. T.C.T. At base of 2nd Bay Tree
5. T.C.T. East end of 2nd Bay Trees.
6. T.C.T. 30 feet east of 2nd Bay Trees beneath current — in trail.
7. T.C.T. At base of brush-rat nest 60 feet east of 2nd Bay.
8. T.C.T. 90 feet east of 2nd bay tree in fern thicket.
9. T.C.T. At base of brush-rat nest south of trail. Thicket of fern & current.
10. T.C.T. 30 ft east of #9 — same hab.
11. T.C.T. 30 ft. west of 1st elderberry tree on trail — Gooseberry & current.

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- Dec. 21; 12. T.C.T. base of elderberry tree along
the north side of trail.
13. T.C.T. 30 ft. east of elderberry
tree in thicket of Snowberry,
Cascara, Fern & Gooseberry.
14. ~~T.C.T.~~ Base of 1st stairs —
Box trap Willow thicket.
15. T.C.T. 7th step from bottom — ~~1st~~.
16. Box Trap Top step of 1st group. —
Current & Cascara tangle.
17. Box Trap — Brushrat nest in middle
of Gooseberry & Cascara &
Current tangle
18. Box Trap — 14th step from top — 1st group
set in path
19. T.C.T. Top of 1st group of steps
20. T.C.T. 30 ft. east of top of stairs
at base of cliff.
21. T.C.T. — 60 feet east of top of stairs
in current.
22. T.C.T. — In path 30 ft. east of #21
23. T.C.T. — " " " " " " 22
In ferns
24. Box Trap — In path 30 ft. east of #23
25. " " " " " " 24
Gooseberry & ferns.
26. T.C.T. Trail 30 ft. east of 25 — Gooseberry & ferns.



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Dec. 21, 27. Box Trap Gooseberry patch — 30 ft. east of 26

28. " " ~~30~~ East of " " — Box

The following are the mice caught this morning — those marked with # sign are new numbers. Due to not knowing the last serial number I started with # 18 —

18 — Ad. ♀ Peromyscus truei in trap # 13

Ad. ♂ Peromyscus truei in trap 19 — dead

19 — Ad. ♀ Peromyscus truei in trap 20

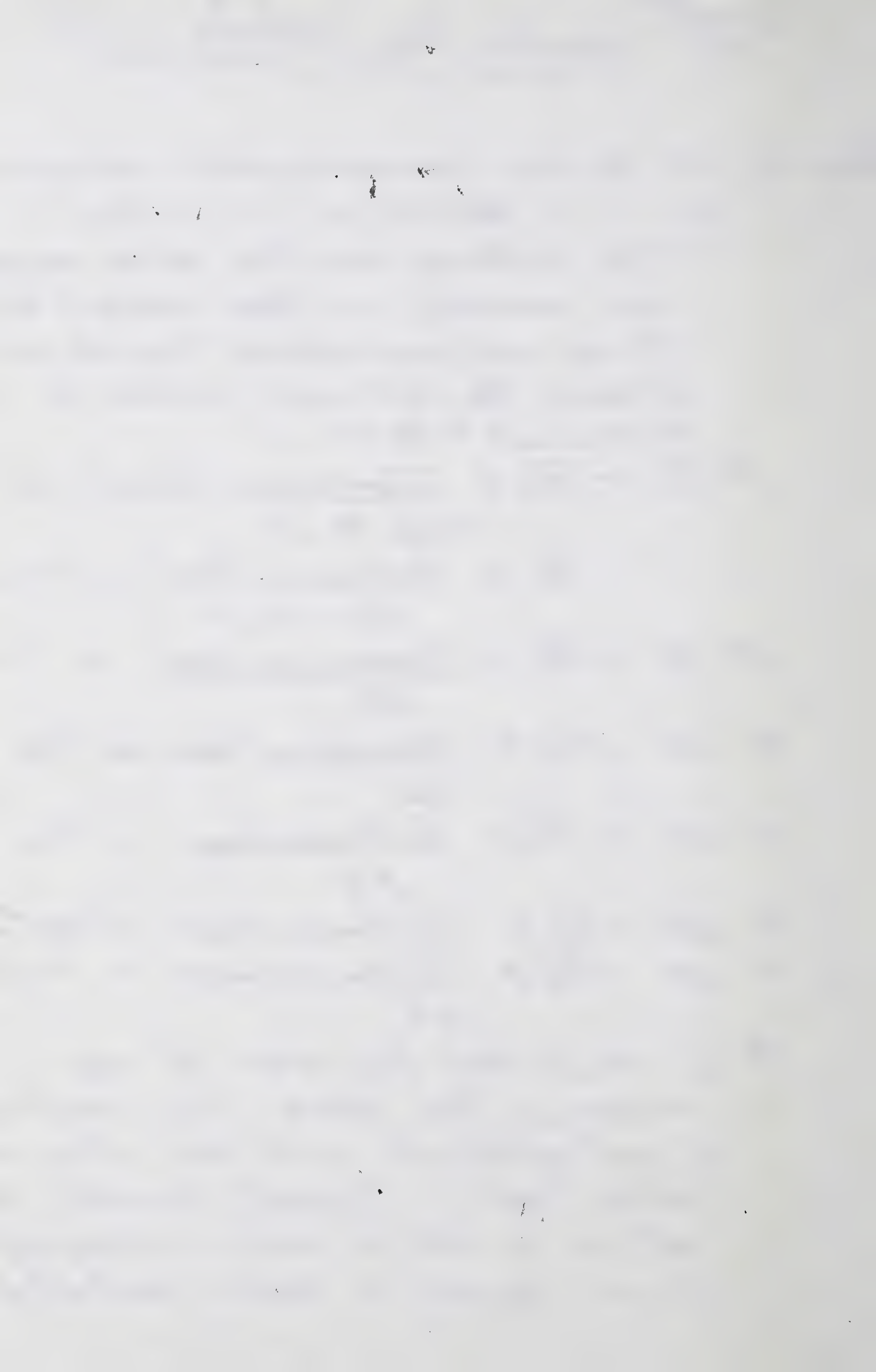
20 — Ad ♂ Peromyscus truei in trap 21

21 — Ad. ♂ Reithrodontomys in trap 22.

22 — Ad ♂ Reithrodontomys in trap # 23

24. — Ad ♀ Reithrodontomys in trap 24

~~xx~~ I think that the reason for my success on the above line, was that I put plenty of food and cotton in every trap. — Tonight, however, there will be a lack of food & consequently I will expect a higher mortality.



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Dec. 22, I went to the primitive area this morning in the rain. I did not attempt to take very many notes because of the weather. I did notice, however, that the traps contained more dead mice than previously. This is probably due to the fact that there was not enough food in them even though there was enough cotton. The following numbers were marked:

#15 Ad. - Peromyscus truei gilberti
in trap 8

#16 Ad. ♂ Peromyscus truei gilberti
in trap 11

* #18 Ad. ♀ Peromyscus truei g. in trap
13

* #20 Ad. ♂ Reithrodontomys - repeat
in trap 20.

Ad. ♀ Peromyscus truei dead in
trap 15.

* #19 Ad. ♀ Peromyscus truei gilberti -
repeat in trap 20.

* #13 Ad. ♂ Reithrodontomys repeat
in trap 20

